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The New England Surgical Society

INFECTIONS OF THE BILIARY PASSAGES.

BY JOHN T. BOTTOMLEY, M.D., BOSTON.

IT is not intended that this paper should offer anything new on the subject in question. It is hoped that it will set forth the gist of present-day opinion with regard to infection of the biliary tract and the influence of that opinion upon our present-day methods of treatment. Infection has always played an important part in the etiology of surgical disease; nevertheless, it is only in relatively recent years that we have arrived at a thorough, accurate, appreciative knowledge of its causative relation to and its method of action in many affections of such organs as the stomach, the appendix and the biliary apparatus, all deeply placed in the body and yet all more or less directly connected with the body-surface through channels lined with mucous membrane. In so far as the biliary apparatus is concerned, the patency of the fact that it is thus connected with the body-surface probably furnished the chief reason why we came at so late a day to a correct idea of the common path followed by infection on its journey to the gall-bladder and associated ducts. Some few years ago Naunyn, the internist, in his studies of biliary disease, emphasized the fact that the presence of jaundice when there are no stones in the hepatic or common ducts, and its possible absence with even a good-sized stone in the common duct, demanded for its explanation some more constant factor than the mere presence or absence of a stone. This factor, he insisted, was infection of the ducts with the consequent swelling and edema of the mucous membrane. He believes that the pathological changes seen in the biliary tract are the result of its reaction to bacterial injury, and that gallstones are incident and not essential in the process. The non-calculous stage of biliary infection has not received the attention to which its importance entitles it and the calculous phase has had too much. In this country the work of Billings and John B. Murphy on focal infections, the infection of organs and portions of the body from remote foci, was a considerable step in advance and prepared the way for the remarkable studies of Rosenow who had ably demonstrated the elective localizing power of certain bacteria in so-called harmless chronic infections (tonsillitis, infected dental roots, sinusitis, etc.) and has shown the striking importance of such foci as sources of the hematogenous infection of distant organs, among others the gall-bladder.

Rosenow's[1] work is of basic importance and a consideration of even that portion of it which has to do with the gall-bladder is of great interest and value. If there is injected directly into the lumen of the gall-bladder streptococci already proven to have an affinity for the gall-bladder when injected intravenously, infection

of the organ does not follow. It has long been known that normal mucous membrane affords marked protection against the invasion of bacteria. Some other factor aside from trauma or an area of lowered resistance, both usually so necessary for local infection, must be adduced to explain the place of localization of bacteria after entrance into the blood stream, and that factor, Rosenow shows, is a quality inherent in some strains of bacteria themselves, a peculiar affinity for localizing and producing lesions in certain organs. Certain strains of streptococci tend to localize and produce lesions in organs corresponding to those affected in the person from whom they were isolated. For instance, eighty per cent. of forty-one animals injected with strains from cholecystitis developed lesions in the gall-bladder. It was shown experimentally that streptococci in infected tonsils and teeth may have elective localizing power, and Rosenow wisely calls attention to clinical facts corroborating the causal relationship between a focus of infection and disease in distant organs. We, ourselves, I think, can recall from our experience the increased incidence of acute appendicitis, acute renal infections and exacerbations of symptoms of duodenal ulcer in epidemics of acute throat infections. In further support of the causal relationship let Rosenow tell of a case seen by both the clinicians and the laboratory men at the Mayor Clinic: it affords a very striking commentary on his own ideas and for that reason is worthy of brief report. A patient complaining of distress after eating, repeated attacks of moderately severe pain in the epigastric region and to the right of it, recurring attacks of diarrhoea, and marked loss of weight—symptoms of chronic cholecystitis without stones—showed on general examination only slight tenderness in the right hypochondrium. Two devitalized, abscessed teeth were removed and a small collection of pus in the upper jaw was drained without perceptible effect on the patient. Six months later, the tonsils were removed and a return to health followed. The primary cultures from the tonsils were injected into four animals. One animal died suddenly and the others were chloroformed at the end of forty-eight hours. Autopsy showed lesions of the gall-bladder, pancreas and the acid-forming portion of the stomach in all four animals. The gall-bladder and the pancreas were hemorrhagic and edematous. Streptococci isolated from the fluid about the pancreas of one dog were injected into a dog and a pregnant cat. Marked lesions of the gall-bladder and the pancreas developed in both. The cat aborted and the foetus showed pancreatic hemorrhages. Cultures from the lesions in the pancreas of the foetus, in the pancreas and gall-bladder of the mother cat and of the pancreas and the gall-bladder of the dog, yielded the streptococcus injected. It seems to me that the deductions from this case are so logical as to need no comment. In the light of our present knowledge, we must accept as true the conclusions of Rosenow.

Furthermore, it is interesting to the surgical clinician to note that Rosenow found a relatively high incidence (21%) of lesions in the gall-bladder following injection of strains of streptococci from gastric and duodenal ulcer and in the stomach and duodenum (29%) following the injection of gall-bladder strains; this finding suggests that the common association of these two lesions in man may also be due to embolic infections by bacteria having affinity for the structures involved. On the other hand, one is struck by noting that in seventeen strains from the appendix 70% of the animals developed appendicitis and in that series, while 11% showed gastric or duodenal lesions also, only 1% developed lesions of the gall-bladder.

It seems safe to assume, then, that the chief cause of infection of the biliary tract is the streptococcus and that it is borne thither by the blood current from a distant focus. The streptococcus, the staphylococcus, the typhoid bacillus, the bacillus of influenza and the colon bacillus have all been found in infected bile. It is Rosenow's belief, however, that though the elective localizing power of the colon bacillus has been occasionally demonstrated both in cholecystitis and appendicitis, it is usually a secondary though important invader in cholecystitis. The importance of the rôle played by the typhoid bacillus is so well known as to need only mention. Graham[2] of Toronto recovered the staphylococcus from the gall-bladders only of such patients as gave a clinical history of mucous colitis in varying degrees of severity, but he considers the lesion in the gall-bladder the primary one. Deaver[3] and many others have preached the causal relationship of appendiceal inflammations to those of the gall-bladder, this infection probably taking place through the portal circulation. Furthermore, the passage of infectious agents from the bowel to the liver by way of the venous and lymphatic systems; and their elimination through the bile, has been advanced as an explanation of the frequent association of gall-bladder disease, duodenal ulcer and appendicitis (Kelling[4]).

Graham[5] of St. Louis has noted the almost constant association of hepatitis with cholecystitis. There is an intimate lymphatic connection between the liver and the gall-bladder; the inflammatory process is often older in the former than in the latter and the path of infection may thus conceivably be from the liver to the gall-bladder. Judd,[6] however, believes that such an occurrence, though possible, must be rare. The gall-bladder is in such intimate juxtaposition to the liver that the mere juxtaposition may explain the coexistence of inflammatory processes in both. We have all seen at

the operating table evidences of hepatitis (usually well localized, occasionally widespread and scattered), when we have been dealing with lesions of the gall-bladder. But we have also met with many instances where no gross lesion of the liver was present. It is well to remember, however, that a microscopic examination is frequently necessary to demonstrate the hepatitis. In a corresponding way, the gall-bladder itself may be entirely innocent in appearance and normal to the eye, and even may be sterile to surface or bile culture and yet show in sections, under the microscope, unmistakable round-cell infiltration, the sure sign of a preceding inflammatory process. I have often wondered what a section of the wall of the common or hepatic ducts would show under the microscope in cases in which they grossly appear within the limits of normality. In other words, are these changes due to inflammation limited to the gall-bladder wall, or are the duct walls also implicated in the process? The true answer to this question might influence our ideas as to treatment.

Infection, then, may reach the gall-bladder along various paths; through the systemic circulation, the portal circulation, the lymphatic system, through juxtaposition and by way of the common duct.

The possibility of infection reaching the gall-bladder by way of the common duct is doubted by many, and my own opinion is that, while such an occurrence is possible, it is by no means common. We have all seen cases of acute, almost fulminant cholecystitis with the tense, reddish-purple, distended, edematous gall-bladder and a common duct that seems to be entirely normal. However, the conditions are not always thus. We know the increased incidence of acute cholecystitis in the corn, shore-dinner season; we are all acquainted with the acute gastroenteritis that usually precedes or accompanies it. If the sphincter at the papilla of Vater functions under normal condition, I think infection of the gall-bladder through the duct is very uncommon; if, however, it has to function under such abnormal conditions as may be present with acute gastroduodenitis, duodenal ulcer, etc., then the mechanism of the papilla may well be disturbed by the irritation, the bile, often in a condition of stasis in the duct, may become infected and this infection may thus reach the gall-bladder itself.

Once infection has reached the biliary tract, how does it act? It may work in such a way as to produce that acute inflammation of the gall-bladder with which we are all so familiar that no time will be given to its consideration in this paper. The lesions are usually at least partially destructive in character and occasionally lead to perforation. Though a case now and then may produce so acute a toxemia as to be lethal, the primary acute attack, even though it may be very severe, is only rarely fatal, and many cases recover without any surgical interference whatever. The great danger, of course, lies in the fact that it prepares the ground for future trouble—the recurrent acute attack of chronic inflammatory disease of the gall-bladder and ducts with its long line of sequences, near and remote.

Nor is any pretension made to offer here an adequate discussion of the possible results of chronic infection of the gall-bladder. A brief résumé will be offered and the sequences will be discussed in the order they come to the reader's mind and not, perhaps, in the order of their importance.

1. The wall of the gall-bladder itself is damaged and may become grossly thickened and greatly crippled in its function. All gradations of chronic infection may be seen, ranging from the impalpable process, imperceptible to the naked eye, to the stage marked by minute, papillomatous outgrowths from the mucous membrane, to that indicated by the so-called "strawberry" mucous membrane, even to the last stage — a contracted, functionally useless but still dangerous remnant of an organ. The neighboring lymphatic vessels are thickened and engorged and the glands infiltrated and enlarged.

2. Moreover, the chronically inflamed gall-bladder must be regarded as a source of toxic absorption. Degenerative changes in other organs (the myocardium for example), arthritis, hepatitis with disturbances of the liver function, anaemia, and a general condition of lowered resistance, are possible results. The derangement of liver function may assume new importance through the recent work of Crile which he himself says is at present suggestive rather than conclusive. The infection, the diminished nutrition, the loss of water equilibrium due to the nausea of jaundice, the lowered blood pressure and the back pressure of the bile, all predispose to "liver shock" with its deleterious effects on the brain cells—a possible factor in raising the mortality of gall-bladder surgery under the usual conditions of anaesthesia. The opinion that an infected gall-bladder may be one of the causes of duodenal ulcer is not without its supporters. Graham, already quoted, thinks that there is some ground for regarding it as a forerunner of mucous colitis also. To this load, already great, must be added jaundice, that undesirable expression of the presence of bile in the blood stream.

3. Pancreatitis. This sequence of chronic biliary infection is only mentioned, since it has been adequately dealt with by Dr. D. F. Jones at this session. An acute pancreatitis is very evident to palpation at operation; equally so would be the advanced case of chronic pancreatitis, were it not for the fact that it is often impossible to distinguish it from malignancy.

It is in the beginning and early cases of chronic pancreatitis that difficulty arises. The pancreas normally is a firm organ; perhaps one would not call it hard. When the firmness exceeds normal, chronic pancreatitis has begun. Surgeons differ in the sensitiveness of their palpation as well as in their ideas of the normal degree of firmness; hence arises the variance in the report of percentages of chronic pancreatitis in biliary infection. Each man is more or less a law unto himself.

4. Cholelithiasis. Chronic cholecystitis may exist with or without stones. Stones may be formed in sterile bile, but it is certain that the great majority of gall-stones are the result of infection. I believe that most of them are formed in the gall-bladder but, unwelcome tenants as they are even there, unlike the usual unwelcome tenant, they are prone to move. They pass on into the ducts and are always, whether in the bladder or in the ducts, potential if not actual sources of danger and harm. They are free to cause ulceration and stricture and obstruction anywhere in the biliary passages, with all the troubles that these portend, or to perforate into the intestinal tract with a possible similar effect there. They furnish the chronic local irritation that may give rise to future cancer. It is said that in 95 per cent. of primary cancer of the gall-bladder, stones are present. They increase the severity of any recrudescence of inflammation and they are exciters of unpleasant reflex phenomena. They, too, may lead to jaundice.

5. Reflex sequences. Of all the viscera, the stomach is the one that participates most, at least symptomatically, in the pathology of the biliary apparatus. Pylorospasm, with its attendant disturbances of gastric motility, and certain changes in the chemistry of the gastric secretion are common accompaniments of an infected gall-bladder either with or without stones.

6. The formation of adhesions. It is certain, of course, that cholecystitis, either in the acute or in the chronic form, tends to the formation of adhesions which in some instances are extensive. These may, without doubt, at times give rise to some discomfort, but I am inclined to agree with Deaver that, in the absence of renewed infection or of mechanical obstruction (which, I believe, is very rare in this field), they are usually harmless. As in other localities, so in the biliary region adhesions are blamed for many things of which they are really innocent. Of themselves, they seldom cause severe symptoms. Their possibilities for doing harm must, however, be borne in mind.

Symptoms. Before such a gathering as this it is not necessary to discuss at length symptoms of either acute or chronic biliary infection. As far as the acute form is concerned, the symptoms are classic and known to you all. In passing, let me call attention to a type of acute biliary infection spoken of by the late John B. Murphy.[1] It is characterized mainly by what he terms the "temperature angle of cholangic infection," which he differentiates from the usual temperature curve of such infections. It is due to an inflammation of the gall-bladder and may exist without jaundice, without pain, without a history of colic and without the usual easily elicited tenderness in the right hypochondrium; recurrent attacks of chills and fever—the old-fashioned "ague"—may be practically the only symptom. A chill occurs, the temperature rises very sharply to 105°–106°, remains high for three to four days and then drops to a normal range, where it continues for from ten days to two weeks, when another sudden exacerbation of temperature with a chill ensues. According to Dr. Murphy, these patients during the acute stage are always sensitive to perpendicular percussion and to deep pressure with the fingers hooked beneath the right costal border; that fact, together with the striking temperature angle, clinches the diagnosis. I have never recognized such a case. I mention Dr. Murphy's description of the typical case in an educational way, because he was so very able a clinician and because, in the event of chills and fever occurring without evident cause, possible infection of the gall-bladder may be brought to your minds.

The symptoms of chronic cholecystitis are usually those which go to make up the symptom-complex commonly known to the laity as "dyspepsia" or "indigestion." They are as varied, of as many colors, apparently as indefinite and as wandering as the patients who complain of them. But a carefully taken clinical history, a painstaking one elicited not at one but at repeated sittings, may lead us to the correct diagnosis. The real incidence and sequence of symptoms is of great importance. A recent article by R. R. Graham[2] has taken up this subject so thoroughly that it would be presumption for me to do more than to recommend it to you for your consideration. It provides a first-rate argument for the importance of history-taking in the training of our house pupils, who, outside the hospital walls, may find themselves without laboratories and without instruments of precision, but who need never be without observing eyes, skillful fingers, inquisitive tongues, and logical, orderly minds.

Treatment. The best, the most satisfactory treatment is preventive; by the term "preventive treatment" here I mean the application of the proper therapeutic procedure before the local pathological changes incident to biliary infection have reached an advanced stage, before stones have formed, if possible, before the gall-bladder itself is infiltrated with the inflammatory exudate. This, I know, is visionary and quite impossible with our present knowledge, but nevertheless, it is ideal, and the ideal is what we should try to attain. I fear, however,

that as in the past most of our work in the way of treatment will have to do with cases in which the pathological process is more or less advanced. Even in that event, we can still aim at preventing future trouble by applying the proper procedure to the pathology presented and by eradicating the original focus of infection. The latter, of course, will not always be possible, since there are certainly hidden infective foci which we cannot hope to uncover.

With the knowledge we have at hand today, the only logical treatment of biliary infections is that afforded by surgery. It may not be ideal, it may not always be entirely satisfactory, but it is surely the best that the present can offer. It is possible that in time the physiologic drainage of the gall-bladder, which has been proposed by Vincent Lyon of Philadelphia, will develop outside the position which it holds today—a possible means of early diagnosis in the hands of an expert user, a possible agent of relief in so-called catarrhal jaundice. But it cannot take the place of a sound surgery in the treatment of gall-bladder infections; it cannot remove an exudate from a thickened, infiltrated bladder-wall nor prevent the pernicious effects of such an infection. As far as the treatment of real biliary infection is concerned, it occupies quite the same position as the so-called medical incision in the treatment of spreading cellulitis in the superficial parts; it is elegant but ineffective. This is the age of "something new"; the times are prone to ascribe to novelties wonderful powers which are seldom realized in fact. I admit that it is through "something new" that progress is made, but nevertheless every new procedure that is proposed should be measured by common-sense standards, and only when the measurement is convincing should the forward step be taken.

The question of the proper surgical procedure to be applied to the various pathological conditions caused by infection of the biliary tract has not yet been definitely settled in its entirety. Numerous articles on cholecystectomy *versus* cholecystostomy, on the technic of drainage of the common duct, on the problem as to whether the gall-bladder should be removed from below upward or from above downward are found in the professional journals. Many of the problems must be solved by the individual operator for himself; he must consider his own ability and must weigh the systemic, the anatomical and the pathological conditions offered by the individual case as he meets it. He must read and ponder and shape his course along ways he feels he is best prepared to follow.

Though certain pathological conditions and certain individual circumstances may make cholecystostomy advisable at times, yet the weight of the best surgical opinion of today is on the side of cholecystectomy as the routine measure. The end-result—and that is the best measure of the worth of an operative procedure—following cholecystectomy seems to be better. Unsatisfactory results sometimes follow either procedure; those after cholecystectomy are almost always due to operative trauma or to operative technical errors; those following cholecystostomy, to pathological conditions which should have been eradicated. Yet, cholecystectomy is by no means a simple, danger-free operation; it is far from fool-proof. I always approach it very respectfully and some of my most serious operative sins in this field have been committed in cases where I had made a very clear demonstration of anatomical conditions and had thought I had plain sailing. Care, care, and still more care, is our only safeguard.

Of what should be done in the presence of pancreatitis, Dr. Jones has spoken.

On the question of the technic of drainage of the common duct much might be said. The natural drainage is through the papilla into the duodenum. When that way can safely be used, use it, because, as with all other mucus-lined channels, incision and operative trauma applied to the common duct may be followed by stricture. If you are sure that the stones have been removed and that the path for the bile into the intestine is unimpeded, suture carefully the operative opening in the duct and place a small drain in the pouch below it; do not drain down *to* it or you sin against the code of good surgery.

For the same reason (possible stricture following operative opening) I believe the method of draining the common duct by passing a catheter through the stump of the cystic duct, should have much consideration. I am sure, however, that the introduction of such a catheter is sometimes a matter of difficulty.

The surgery of biliary infections is a field that should be held in much respect. The occasional operator should enter it only in cases of emergency. Even the most experienced surgeon may have his skill and judgment taxed to the utmost, because in no other abdominal field may the pathological processes be more widespread and varied and the anatomical relations more important and involved.

REFERENCES.

[1] Rosenow: Surg., Gyn., and Obstet., Vol. xxxiii, No. 1.
[2] Graham, R. R.: Arch. of Surg., Vol. iii, No. 1.
[3] Deaver: Surg., Gyn., and Obstet., October, 1917.
[4] Kelling: Archiv. für Verdauungs-Krankheiten, Berlin, Vol. xxviii, No. 2.
[5] Graham: Surg., Gyn., and Obstet., Vol. xxvi, pp. 521-537.
[6] Judd, E. S.: Jour. A. M. A., 1921, Vol. lxxvii, No. 3.
[7] Murphy, J. B.: Clinics, Vol. ii, No. 6, p. 1052.

Announcement of meetings to be held on and after next Thursday should reach the desk of the Editor of the JOURNAL not later than next Saturday before noon. The printers do not work Saturday afternoon and the material is locked up in the forms on Monday, and goes to press Tuesday morning. The wrapping and mailing begins Wednesday. Please forward copy early.

THE VALUE OF MEDICAL BILIARY DRAINAGE FOR DIAGNOSIS AND TREATMENT OF DISEASES OF THE GALL-BLADDER AND BILE DUCTS.

BY FRANKLIN W. WHITE, M.D., BOSTON.

Instructor in Medicine, Harvard University. Visiting Physician, Boston City Hospital.

THE Meltzer-Lyon method of drainage of the bile passages by means of the duodenal tube and douching the duodenum with a magnesium sulphate solution, has attracted much attention and is being tried at the present time in many medical and surgical clinics throughout the country, and within a year or two we shall have a large amount of data which will definitely settle the value of the method in diagnosis and treatment of diseases of the liver and biliary passages. The method has aroused much interest and some enthusiasm over the prospect of better diagnosis and treatment, and has met with much skepticism as to the possibility of telling where the bile comes from or of draining the gall-bladder in this way, or of culturing its bacteria. In introducing a new method, it is natural to stress its good points and to say less about its difficulties and limitations. This tone is easily heard in the earlier papers.

My own experience with the method covers nearly a year and about 100 cases, and I prefer, at this time, to give my general impressions of the method rather than an elaborate, statistical study. There are many phases of the subject, physiological, chemical, bacteriological and clinical, which need further study, and I realize, in looking backward, that data in the earlier cases were incomplete.

The appeal of the method is very strong, both to doctor and patient. The doctor has the contents of the bile passages in his hands after a simple procedure and can examine it in any way he chooses, chemically or for cells and bacteria. There is also the appeal of early diagnosis and early preventive treatment before real damage has been done to the liver and bile passages. The "bilious" patient sees his bile taken out of him and feels that he is cleaned out and something nasty is being taken away.

There is much that is easy and simple about this method. It is easy to get patients to submit to it. The hope of a better diagnosis and, perhaps, of a medical cure, is attractive.

It is usually easy to get the tube in. The statistics in one hundred consecutive ambulatory cases examined at my office, in which the position of the tip of the tube was verified by the fluoroscope, showed that 80 were well placed in the duodenum in 20 to 30 minutes; 15 required from 30 minutes to one hour; one, two hours, and four failed to pass (adhesions, atonic stomach, vomiting of tube, etc.). These figures represent the milder or moderate grade of ambulatory case. The per cent. of delayed passage and of failures to intube will be higher in the sicker or ward patients, in those with extensive adhesions or with deep jaundice and nausea, so that the failures to pass the tube to the duodenum may reach 10 per cent., or even more.

It is easy to get the bile out; anyone can do it,—a nurse or attendant, or even the patient himself, after a few lessons.

On the other hand, there is much that is *not* so easy about the method. It is not easy to tell just where the bile comes from or why it flows so freely, whether as a result of relaxing the common duct sphincter, or of stimulation of the liver, or both. It is not easy, at present, to definitely explain the color changes in the bile, whether due to emptying the gall-bladder of darker bile or to a change in liver secretion after magnesium sulphate. It is not easy to decide about the cells one sees, whether they come from inside the bile passages or from outside (stomach, bowel, etc.). It is not easy to interpret the cultures and to decide whether they are important causative bacteria or extraneous contamination. It is not easy to sum up the diagnostic value of the method, especially if one has a large series of cases with few operations. We will discuss these things separately, as far as time permits.

Physiology.

Certain facts have been observed after local douching of the duodenum with $MgSO_4$ solutions and aspiration of the bile through a duodenal tube, which have been interpreted in various ways by different men. After this use of magnesium sulphate in normal, and many sick, persons, a free flow of bile occurs, usually light yellow at first, later changing to darker or brownish yellow, and later still, to light yellow again. Lyon's theory is that the first pale yellow, or "A," bile comes from the common duct, that the second darker, more viscid "B" bile comes wholly or largely from the gall-bladder, and the third, clear yellow, thinner "C" bile is freshly secreted liver bile, and that he is able, in this way, to obtain the bile *separately* from common duct, gall-bladder and liver, and establish a refined diagnosis of the different sections of the biliary system.

The method of Lyon is based on the facts that there is a loose sort of sphincter discovered by Oddi at the lower end of the common bile duct at the papilla of Vater, which has a definite sphincteric action, and on the discovery by Meltzer that magnesium sulphate, applied locally, relaxes this sphincter and permits a flow of bile into the duodenum. This is very important, as by means of this relaxation we are able to drain the bile passages. Simultaneous, forcible contraction of the gall-bladder at the same time after using magnesium sulphate has not been proved, I believe, by any labor-

tory experiment. Doyon has found a double, or crossed innervation to the gall-bladder and ducts, so that stimulation of the *central* end of the vagus (or of the *peripheral* end of the splanchnic nerves) causes simultaneously a relaxation of Oddi's sphincter and a contraction of the gall-bladder. This emptying of the gall-bladder is covered by Meltzer's "law of contrary innervation." This "law" may apply *after the use of magnesium sulphate* in this field and probably does, but we have no definite proof thus far. The gall-bladder is a rather inactive, limp affair, with little muscle fibre, and we are forcing the comparison a little when we compare it to the muscular urinary bladder. Even if the normal gall-bladder does contract after stimulation with magnesium sulphate, the thickened, rigid, fibrous, adherent, pathological ones do not.

On the other hand, *the bile does flow, it flows freely, it is an every-day experience, it is absolutely unquestioned.*

The emptying of the bile passages when the sphincter is relaxed is probably due to siphonage or running out of the bile, and perhaps more or less to contraction of the gall-bladder.

It has been found that with the gall-bladder exposed during anesthesia and then stimulated by magnesium sulphate, the gall-bladder did not visibly contract; but these experiments may be vitiated by the effect of the anesthetic on the muscle fibres of the gall-bladder. On the other hand, Sachs has several times at operation seen the distended gall-bladder gradually collapse and empty through the duodenal tube after the use of magnesium sulphate. He compares this to the collapse of a balloon when the air is let out, no muscular *contraction* was observed.

The bile flow and color change after the use of magnesium sulphate is explained by Einhorn and Dunn and Connell in quite another way.

Einhorn does not believe that the darker bile is gall-bladder bile necessarily, but that it is due to the effect of the $MgSO_4$ as a liver stimulant, increasing the flow of bile directly from the liver and driving it rapidly and directly into the duodenum. He finds that the stronger the $MgSO_4$ used, the darker the bile and the higher its specific gravity. He finds that other salts, such as sodium sulphate and sodium bicarbonate, with no relaxing action on the duct sphincter, give a similar color reaction to $MgSO_4$, and that a group of patients without gall-bladders (cholecystectomy) give a similar color reaction; that all substances producing dark bile do it whether the gall-bladder is present or not. In short, he does not believe that the color change is due to the emptying of gall-bladder contents.

Dunn and Connell have made some interesting experiments on bile flow after introducing $MgSO_4$ into the duodenum in a patient without gall-bladder or common duct, and in whom the hepatic duct had been anastomosed to the duodenum and who had also a duodenal fistula. Here was no sphincter of Oddi to be relaxed and no gall-bladder to be emptied. The patient's digestion was good and she felt well during the entire period of the studies. The typical "A," "B," "C" sequence of colored biles was obtained. The same result was obtained when $MgSO_4$ was injected into the duodenum, 32 cm. below the second part of the duodenum and also when the $MgSO_4$ was taken by mouth. Quantitative studies of the bile showed that the color changes were due to a variation in the amount of bile pigments present. They conclude that the color changes in the bile are due to a reaction of the liver to the presence of magnesium in the portal blood after absorption from the bowel.

To sum up, we may say that all observers agree that there is a free flow of bile, a free "drainage" of the unobstructed biliary system after the use of $MgSO_4$ with the appearance of a more concentrated, darker bile containing more bile pigments, although they explain this result in different ways, one by relaxing the common duct sphincter and contracting the gall-bladder, and the other by stimulating an increased flow of bile from the liver. *The practical point is that it is possible to empty the bile passages more or less completely at will by the use of $MgSO_4$, and that this material is well worthy of study, however it is obtained.*

Lyon's theory that bile from different parts of the biliary tract, common duct, gall-bladder and liver, can be judged largely by the gross color, needs further proof before it can be accepted without reservation as a method of *localizing* disease in the biliary passages.

How complete is the emptying of the gall-bladder in this method? This is, of course, important in treatment. Unfortunately, we do not know. My impression is that it varies a great deal in different cases even without gross obstruction, and in the same case at different times. This may lessen the value of the method both for diagnosis and treatment, or require repeated stimulation and prolonged drainage, as emphasized by Smithies.

General Technique of the Method.

This has already been much described by Lyon, Smithies, Simon, Friedenwald, Sachs, and others, but it may be well to run over it briefly, as it is new to many.

The patient is examined fasting (and for this reason usually in the morning). This is very important, as it takes little mixed food to block the small tube and delay the washing out of the stomach. The teeth are well brushed and the mouth thoroughly rinsed with liquor antisepticus. The patient sits down and a sterile duodenal tube with Rehfuss or Lyon tip, is passed into the stomach and the fasting

residue is aspirated with a syringe and examined as desired (HCl, blood, cells, bacteria). The stomach is then thoroughly washed with a weak zinc chloride formalin solution,* running in about 300 c.c. at a time, and syphoning it out again until the washings are absolutely clear (this takes about twenty minutes). The patient now lies on a couch, with head and shoulder, slightly raised, turned about half-way toward the right side, and swallows the tube *slowly* to the 75 cm. mark, taking about twenty minutes to do this. Sometimes, a few ounces of water are sipped to help the progress of the tube. When the tube is in the duodenum (see below) the duodenal contents are aspirated with a syringe and then the duodenum is douched with a 1/3 saturated solution of magnesium sulphate in water (30 c.c. of saturated solution of $MgSO_4$ in water, mixed with 60 c.c. of water). The plunger of the syringe is removed and the $MgSO_4$ solution is poured into the barrel of the syringe attached to the tube. The tube is then attached to a six-ounce aspirating bottle with rubber cork and two openings, one connected with a small rubber aspirating bulb. Gentle aspiration is begun at once and the bile soon starts to flow and continues with little or no help from the aspirator. Lyon separates three types of bile during this flow, chiefly by color and consistency. In normal cases, the first, or "A," bile is light, golden yellow and rather thin; the second, or "B" bile, is darker yellow and more ropy; the third, or "C" bile, is light yellow and thin. Lyon considers that A represents bile from the common duct, B from the gall-bladder, and C from the liver and hepatic ducts.

The biles are collected in separate sterile bottles for examination. The color must be noted when fresh, as most biles soon darken on standing. The cells also must be examined at once as they are readily digested by ferments present.

The drainage usually takes from 20 to 30 minutes and about 15 or 20 c.c. of A and 50 or 60 c.c. of B and C bile obtained. When this is finished, the duodenum is douched with 300 c.c. of normal salt or Ringer's solution, and the tube withdrawn. The bowels are usually moved more or less freely by the $MgSO_4$ solution, which is considered desirable, as it may carry infected bile out of the lower bowel. A light lunch of malted milk or broth and crackers is given after the drainage, to avoid weakness.

Several of the steps in the process will be considered separately.

The Passage of the Duodenal Tube.

The early methods of introducing the tube were slow, taking one to two hours, or often overnight. With the rapidly growing use of the tube, a rapid method has been developed which will place the tube in the duodenum in 20 to 30 minutes in about 80 per cent. of cases where no pyloric stenosis or extensive deforming adhesions are present. I have verified these figures by the use of the fluoroscope in my own cases. A fairly heavy tip, such as the Rehfuss or Lyon tip, carries the tube down the esophagus through the cardia to a low point on the greater curvature, with the patient in the erect position, swallowing about 55 cm. of the tube. After the stomach is washed out, the tip is kept in the antrum near the pylorus in a simple manner, by gravity. The patient lies on a couch with the head and shoulders slightly elevated. In this position there is little tendency for the tip to go back up the lesser curvature. The patient remains in a right oblique position (turned half-way toward the right side). This turns the tip toward the right and toward the pylorus.

Then the tube is swallowed, *slowly*, 15 to 20 cm. more, taking 15 to 20 minutes. The tip is moved forward rather slowly by peristalsis through the pylorus into the duodenum, and if the tube is fed in fast, the upper part travels faster than the tip and loops form in the stomach, which often cause delay. It is worse than useless to swallow the tube rapidly, or keep feeding the upper part of the tube in, unless the tip has gone forward through the pylorus. We need never put the tube in more than 75 to 80 cm.

The type of stomach does not matter much. It is somewhat surprising that the fairly low stomachs are not a real source of delay. Spasm of the pylorus is not important, the slight gagging produced by the tube usually relaxes spasm. We have never used atropin. It is important to know when the tip has passed into the duodenum and when drainage can be begun. This is rapidly and accurately done by the fluoroscope, but if the x-ray is not available, a fairly safe estimate may be made in other ways: (1) Inject an ounce or two of air through the tube with a syringe and listen over the epigastrium with the stethoscope. If the tip is in the stomach, we have a low-pitched, rumbling sound largely to the left of the median line. If the tip is in the duodenum, we have a higher pitched, hissing sound largely to the right of the median line, followed at once by the squirting sounds of peristalsis in the small gut; (2) if the patient drinks a few ounces of water and the tip is in the stomach, it is easily and promptly aspirated out. If in the duodenum, it is hard to recover.

For the most accurate diagnostic work, especially if absence of bile is to be used as an important diagnostic point, showing obstruction of the common duct, the x-ray should be used to be sure the tip is in the duodenum and the drainage properly carried out.

*The stock solution is: Formalin, ½ grain; zinc chloride, 2 grains; boric acid, 10 grains; water, 1000 c. c. We use 25 c. c. in 250 c. c. water for lavage.

The Color Change. The Segregation of the Bile.

The average normal sequence of "A," "B" and "C" bile has already been noted and the cause of the color change has already been discussed. In pathological cases this may differ in various ways. The "B" bile may be much darker and more turbid than normal, or of different greens and blues, or even bloody, or there may be no color change to a darker or "B" bile, an absence of "B" bile, or there may be an *entire absence* of *all bile*, even with the tube in the duodenum and stimulation properly carried out.

This segregation, or separation, of the three biles is very far from absolute. It depends largely on color. Sometimes the color change is sharp and clear, quite often it is slight and gradual and segregation is guesswork. I read that "duct bile over 15 c.c. suggests duct stasis," etc. I do not believe this is a matter for measurement in cubic centimetres. There is a tendency to say, "This is duct bile, this is gall-bladder bile, this is liver bile." As a matter of fact, we have a series of usually open passages all connecting, — the stomach, duodenum, common duct, gall-bladder, liver ducts, etc.,—and each bile is usually a mixture. Probably "A" is a mixture of duct, gall-bladder and liver bile, with duct bile predominating, and "B" and "C" similar mixtures with gall-bladder bile and liver bile, respectively, predominating. The whole matter of color change and bile segregation needs clearing up. More experimental work on normal animals or men is needed before we can depend upon it to accurately *localize* disease in one specific part of the biliary tract.

The color changes in the same patient are not always constant at different drainages. We naturally expect some variation, but the difference may be very striking and capable of various interpretations. It is obvious to me that the gall-bladder, or bile tract, may be very differently drained in the same patient at different times. Absence of any color change, absence of dark, or "B," bile seems important. In the more serious cases, it was commonly found with cystic duct obstruction. This has been several times verified at operation, and seems a valuable point. I have also seen an absence of "B" bile frequently, in mild cases where it was impossible to believe that the duct was closed. This sign must be taken with the symptoms and other physical signs, to be properly interpreted, and it is very desirable to repeat the drainage several times on the same patient if it is to be used as an important diagnostic point.

If we are to depend on the absence of "B" bile, or of all bile, in diagnosis, we must be sure that the tip of the tube is actually in the duodenum. This can be best proved by the x-ray.

The Examination of the Cells.

The examination of the cells in the bile sediment is important and has also its difficulties. They are best found by picking up the shreds and flakes in a pipette without centrifugalizing and placing them on the slide for microscopic examination. It is important to wash the mouth and stomach very clean so that cells from the bile passages may not be overlaid and mixed with leucocytes and epithelium from catarrh of the nasopharynx, stomach, etc. This is often easy, and sometimes very hard. Spurts of gastric contents are often forced into the duodenum before the drainage is finished, bringing with them leucocytes and epithelium from above to mix with the bile sediment, and also causing a fine, cloudy acid precipitate of bile salts. We usually see many extraneous (non-biliary) cells in our slides and sometimes unfortunately the result is like looking for a renal sediment in a case of leucorrhea.

Some experience and skill are needed just as for a urine sediment. Deep bile staining of the cells is usually seen in the true biliary sediments, leucocytes, cuboidal duodenal cells and columnar epithelium from the ducts and gall-bladder.

In normal cases, we may have extraneous cells, few or many, and a scanty biliary sediment, a few leucocytes and round or columnar cells, a few fat needles or fat drops, granular bile salts, etc.

In pathological cases there may be abundant deeply bile stained pus cells and desquamated epithelium, columnar and round, mucus, rarely blood cells.

Crystals and amorphous forms of cholesterol and bile salts are always present in some degree. Occasionally they may be very abundant, suggesting the possibility of stone formation. Rarely, there may be a fine, gritty sediment of bile salts. This occurred twice in this series and a diagnosis of probable gallstones was made which was confirmed at operation.

Cultures.

I speak of this subject with mixed feelings. It seems impossible to sterilize the upper digestive tract in any surgical sense and, on account of skepticism, the earlier one-half of our cases were not cultured. On the other hand, Cushing, McNeal and Chace, and others, have shown that the normal duodenum of a fasting patient is almost free from living bacteria, and frequent sterile cultures in chronic cases have shown that contaminations can be often ruled out by the simple measures already described (cleaning the mouth thoroughly,

washing the stomach, sterilizing the tube, etc.). The bacteria most frequently found were in this order: the colon bacillus, staphylococcus aureus and streptococci. About one-fifth of the cultures were sterile, a few showed merely contaminations such as B. Proteus and Subtilis, or Staphylococcus Albus. There was some real difficulty in deciding whether the bacteria found were causal or accidental, and on that account we have had little experience with vaccines.

Sometimes the cultures were of great value, showing an abundant, almost pure culture of some pathogenic organism, streptococcus hemolyticus, or staphylococcus aureus, which matched exactly with organism found in the tonsil, tooth root abscess or sinus.

More positive cultures were found in acute or subacute cholecystitis, and more sterile cultures found in mild chronic cholecystitis and gallstone cases. That is what might be expected from previous cultures on gall-bladders opened at operation. Repeated cultures from the bile drainages of the same patient have proved fairly constant in the well-marked cases, and variable in some others.

The bacteria found in the bile drainage cultures have checked up fairly closely with cultures from the excised gall-bladder, though less striking than in the interesting and larger series of operated cases reported by A. C. Whipple in May, 1921, in the *Annals of Surgery*.

Diagnosis.

In general, we may say that positive evidence is more valuable than negative and always means disease. By positive evidence, we mean clear signs, such as marked color changes, dark, turbid bile, abundance of deeply bile-stained pus cells, and desquamated epithelium, abundant pure cultures of pathogenic bacteria, a sediment gritty with crystals or such signs as complete absence of bile, or constant, complete absence of the color change, absence of "B" bile, where the drainage is properly carried out and we know that the tube is in the duodenum.

On the other hand, faint or negative evidence does not always mean a normal condition. The diseased area may be blocked off by obstruction, as in gallstone cases, and other obstructions of the cystic duct, and all the drainage come from the comparatively healthy part of the bile passages.

Many chronic cases give sterile cultures.

The diagnosis is easy where the signs are marked, such as dark, turbid bile, pus, abnormal epithelium, crystals, abundant bacteria, etc. The diagnosis is not easy and certain in some mild or early or borderline cases in which the method has been emphasized for early diagnosis and early preventive treatment.

There is always the difficulty in judging a new diagnostic method by a long series of "medical" cases in which the diagnosis is only checked in a small portion by operation. We have many of the milder and subacute cases with a clinical diagnosis backed up by the bile examination, and medical treatment with relief or cure and no absolutely proved diagnosis, as we have in a surgical series. Fifteen of our cases were operated and the diagnosis made by clinical symptoms and signs, and by means of bile drainage, was correct, as a rule.

In ten *Normal Persons* the bile drainage proceeded in a normal way. There was considerable variation in the color change of the "B" bile. We never found abnormal cells, mucus, crystals or bacteria.

Catarrhal jaundice and cholecystitis cases proved the best group for diagnosis, especially the moderate grade cases, without much obstruction. In 38 cases diagnosed cholecystitis or cholangitis (including many mild and moderate grade cases without operative check on the diagnosis), positive evidence by bile drainage was obtained in 32. In 18 doubtful or very doubtful cases, 14 showed a normal bile drainage. Operative confirmation of both positive and negative diagnoses was satisfactory. In the doubtful cholecystitis cases, a normal bile drainage seemed a valuable link in the chain of negative evidence. Several suspicious cholecystitis cases giving a normal drainage, showed a normal gall-bladder at operation.

If there was serious duct obstruction, especially of the cystic duct as in acute empyema of the gall-bladder and some chronic fibrous cases, the bile drainage test showed little. No bile came from the pathologic area and practically the only sign was absence of "B," or darker, bile. If some slight color change was noted, the drainage was not distinctive, and fell approximately in the normal class. This same result was found in the stone cases about to be described. In one case of cholecystitis with much obstruction, only 6 c.c. of bile was obtained, but this was so pathological that a correct diagnosis was made.

The Gallstone Cases were much less satisfactory for diagnosis, as a rule, unless there was active cholecystitis or the ducts were not obstructed. Of twelve gallstone cases, eight, or two-thirds, of the cases gave a normal or approximately normal drainage. The only suspicious feature was the absence, or probable absence, of darker or "B" bile. This point was especially impressed upon us in several cases where the diagnosis of gallstones was made clearly by x-ray before bile drainage was done and every effort was made by repeated drainage to get a characteristic bile, without success. This is easily understood, because the ducts, especially the cystic duct, was commonly obstructed, shutting off the chief pathological area from drainage. This may prove to be a very valuable diagnostic point if not simulated

in other cases without cystic duct obstruction.

The contents of several excised gall-bladders with stones was studied for sediment and bacteria, and were found *sterile* and *without sediment*. The only grossly abnormal feature was the dark, ropy character of the bile. This may help explain why some drainages in gall bladder cases are not distinctive.

In two stone cases, on the other hand, a great excess of crystals was found, with a distinctly *gritty* sediment, and stones were correctly diagnosed.

The Cancer Cases were naturally a difficult group for study and tiresome procedures. There were five cases involving the liver and bile passages (cancer of the head of the pancreas, common duct, gall-bladder). All were deeply jaundiced, and in two the bile drainage failed, due to vomiting or lack of passage of the tube into the duodenum. In the three others, there was *entire absence* of bile with presence of pancreatic ferments and more or less blood, a picture very suggestive of malignant obstruction of ducts though, of course, absence of bile may be found in any type of complete common duct obstruction.

In Four Cases of Hepatitis, all serious, with deep jaundice, including one case of acute yellow atrophy of the liver, the drainage failed on account of vomiting.

The Technique of the Test is important in diagnosis. Just as in the Wassermann reaction, if the technique is sloppy, the test is useless, or worse than useless. Some skill, care and experience are needed. It is easy to be overcritical and say that the cultures are uncertain, the cells dubious and the separation of "A," "B," and "C" bile artificial. It is easy to get discouraged, especially if the first cases are obstructive and no bile is obtained, or there is vomiting and it is impossible to get the tube in, or stone cases are examined and the bile obtained is not diagnostic. It is better still to give the method a careful personal trial, to recognize its limitations, but to get something out of it. If this something is too small to justify the effort, the method will be discarded.

The method in all its detail of preparing the patient, intubing the duodenum, microscopical, chemical and bacteriological examination, is somewhat elaborate and time-consuming. It is not altogether agreeable. It probably requires an x-ray check for the best diagnostic work, also repetition of the drainage to avoid confusing variation, and it has its limitations. Of course, we do not want any new clinical test unless it is definitely worth the time and expense of using it.

In my own experience, the method has been useful and sometimes very useful, and I am continuing to study it.

To sum up our diagnostic findings in another way, we may say that:

1. Markedly abnormal bile, that is, thickened, darkened bile with an excess of mucus, abnormal cells and bacteria, with cultures usually positive (staphylococcus, streptococcus, B. Colon), was found in acute cholecystitis and cholangitis and the acute exacerbations of chronic cholecystitis.

2. Slightly abnormal bile, that is, a clear "B" bile, somewhat thickened, with an increase of mucus, few bile-stained leucocytes and epithelial cells, usually positive cultures, was found in subacute and chronic cholecystitis and a few gallstone cases. In two of the latter, gritty bile, with an excess of bile salts and cholesterol, occurred.

3. Clear, normal bile, with viscosity sometimes increased and cultures usually sterile, was found in cases of chronic cholecystitis, most gallstone cases, and in normal persons. (Do not miss this. It is unfortunate for diagnosis, but true.)

4. No dark or "B" bile, with a clear, yellow, abundant flow of bile, was found in cases of cystic duct obstruction usually due to gallstones (this was several times verified at operation), also in a few mild cases of indigestion in which we do not believe the duct was obstructed.

5. No bile with pancreatic ferments present on repeated accurate drainages was found in common duct obstruction, more frequently cancerous, less frequently due to stone or stricture.

Many of these findings have been confirmed by the extensive experience of Lyon, Whipple, Smithies, Brown, Friedenwald, Sachs, and others.

Treatment.

The treatment of infections of the biliary passages is frequently surgical, but is not always so: for example, we do not operate for catarrhal jaundice or many milder types of cholecystitis. All grades of infection are found, both as regards severity, duration and the pathological tissue changes which accompany them.

It would be a serious mistake to try medical drainage on acute, urgent, virulent cases, acute or chronic empyema of the gall-bladder, severe obstructive cases which will not drain. On the other hand, there is a real and fairly wide field for medical treatment in the milder and earlier cases without marked pathological damage, as well as in some doubtful borderline cases in which biliary infections are seriously suspected without being absolutely proved, and in which an operation seems too radical. The method is only mildly uncomfortable for the patient and has no danger, as far as I have seen or heard.

I believe that the method frequently relieves biliary stasis, will help to clear out infection, will take a load off the liver and, if successful, will frequently prevent more serious damage to

liver, gall-bladder and bile passages. It may be tried, as Lyon suggested, as an alternate method of treatment where there is a question about the immediate need of surgery and perhaps a supplementary means of *continuing* drainage where immediate surgical treatment leaves the patient only partly cured. It is a matter of judgment where to draw the line between medical and surgical cases. Experience must be our guide. I frankly do not believe that all biliary tract infections need surgery in the early stages any more than all peptic ulcers do. It may be asked: What does this "drainage" accomplish? Isn't the bile running off into the bowel every day? All writers agree that biliary stasis in the gall-bladder and ducts is the forerunner of infected gall-bladders and ducts, and of gallstones. It is this stasis which the method aims to combat by giving as free drainage as possible. If there were no bile stasis there would be no place for the method in treatment. If we watch results in a group of the milder cholecystitis, choledochitis cases, we see very definite, clean-cut results within one or two months. We see the jaundice clear up, the bile return to normal in color, cells, mucus and bacteria, the symptoms gradually disappear and health restored. I have definitely watched this sequence in about twenty private patients in the past year and could not fail to be impressed. The drainage was done two or three times a week at the start and gradually dropped to once in one, two, three, or four weeks, as the case progressed. It has several times happened that the bile has cleared up more slowly than the symptoms, and it seems reasonable to continue the drainages till the bile was normal, even after the symptoms were gone, to avoid recurrence.

I realize perfectly that the *method may be abused* in this class of cases, that the diagnosis of mild cholecystitis may be carelessly made, and patients, especially neurasthenics, may be needlessly treated by this somewhat elaborate method, and may improve in health because of the strong psychic effect of the treatment in the hands of an enthusiast. It is needless to say that the method should not be used for this purpose alone.

My experience with *catarrhal jaundice* is limited to six cases. The group is too small for a definite opinion. The results of treatment were not striking in comparison with untreated cases. Some cases cleared rapidly with drainage. One or two cases in which drainage failed and no bile was obtained, ran a course very similar to those where drainage was done every three or four days. It is worth remembering that an early drainage may fail because of considerable obstruction, and later drainages be entirely successful. The treatment seems logical and we are prepared to try it further.

Even in some inoperable gallstone cases, it is apparently possible to get results with duodenal drainage. I have been forced to try this treatment, not from choice, but from necessity, in two patients with gallstones. Both had typical biliary colics; in both, the stones were clearly and beautifully pictured by x-ray, and both were considered bad surgical risks, because of angina or chronic nephritis. In both cases the treatment was begun just after a series of severe colics and in the presence of jaundice, and as a result, or sequence, of biliary drainage, all gall-bladder symptoms disappeared, the stones became entirely "latent," and have remained so for more than a year, and the patients consider themselves well, as far as the gall-bladder is concerned. Of course, this is not a plea for the use of medical drainage in gallstone cases, but merely a record of a surprising result or sequence of treatment in two inoperable patients.

I may add that I have reluctantly tried the same treatment for a short time in a few stone cases at the urgent request of the patient, who dreaded operation and was anxious to try any method which gave the slightest hope of medical relief. No gall-bladder bile was obtained, the cystic duct was obviously obstructed, and the patients came to operation as might be expected.

The *use of vaccines* is logical in infections of the biliary tract as in any other type of low-grade infection where the system is unable to produce sufficient antibodies to destroy the bacteria. We have found some difficulty in verifying a particular organism as the source of the infection, and on that account have used vaccines in only a few cases.

SUMMARY.

The profession owes Meltzer and Lyon a debt for their stimulation of the study of the liver. They have made us think and have given us a new method.

The early papers seem over-enthusiastic and dogmatic, and said too little about the limitations and difficulties of the method. We cannot agree with them in detail.

The physiology of the method, the cause of the color change, the action of $MgSO_4$ on the gall-bladder, the segregation of the bile, need further study in normal individuals or animals to give a firm foundation for clinical and diagnostic work.

Its use for diagnosis has its difficulties and limitations. It is somewhat elaborate and time-consuming, consisting of intubation, lavage, aspiration, microscopical examination, cultures etc., but it can be carried out on 9/10 of the patients chosen for examination. It requires repetition of the drainage and also the use of the x-ray for the best diagnostic work, although much diagnosis and most treatment can be done without the x-ray. The segregation of the bile.

the study and interpretation of the cells and bacteria present difficulties, most of which can be overcome by experience. The pathologic area may be blocked off by obstruction, *e.g.*, of the cystic duct, and the drainage not be very abnormal in an important case.

In spite of these limitations, the method has proved useful and sometimes very useful in diagnosis.

It helps to show whether the ducts are open or closed. If no dark or "B" bile is obtained on repeated drainage, properly performed, we may suspect cystic duct obstruction, frequently with gallstones.

If *no bile* is obtained with a proper drainage, but pancreatic ferments or blood are found, common duct obstruction is present, frequently malignant.

Cholecystitis and cholangitis cases, unless marked obstruction exists, usually give a bile which is abnormal in color, appearance, cells, mucus, and bacteria.

Gall-bladder sand may aid in the diagnosis of gallstones but, in general, the drainage in gallstone cases was not characteristic.

In treatment, it is logical to combat biliary stasis, the well-recognized forerunner of biliary catarrh, infections, and stones. We are not sure, at present, how completely this method empties the biliary passages in all cases, but in many it appears to do this very well.

The best field for its use is in the milder and moderate grade of cholecystitis and choledochitis cases, where no marked obstruction exists. Many such cases are greatly relieved, or apparently cured, following this treatment.

It is obviously unsuited for treatment of acute, virulent infections of the gall-bladder, acute or chronic empyema, gangrenous cholecystitis or cases with known stones or tumor, or severe chronic obstructive cases which will not drain. It may be occasionally useful in some of these cases when surgery is contraindicated, as in old people, or in cardiac, renal or diabetic patients.

In closing, I wish to acknowledge my indebtedness to my colleagues at the Boston City Hospital for the opportunity to study their patients, and to my co-workers, Doctors Resnick, Berger and Sharpe, for their valuable assistance.

BIBLIOGRAPHY.

Brown, George E.; Jour. A. M. A., Vol. 1920, lxxv, p. 1414.
Doyon: Arch. di physiol. norm. e pathol., 1894. Vol. vi.
Dunn, A. D., and Connell, K.; Jour. A. M. A., 1921, Vol. lxxvii, p. 1093.
Einhorn, M.: New York Med. Jour., 1921, Vol. cxiii, p. 313; New York Med. Jour., 1921, Vol. cxiv, p. 262.
Friedenwald, J., and Morrison, T. H.: New York Med. Jour., 1921, Vol. cxiv, p. 280.
Lyon, B. B. V.; Jour. A. M. A., 1919, Vol. lxxiii, p. 980; Jour., A. M. A., 1920, Vol. lxxiv, p. 246; New York Med. Jour., 1920, Vol. cxii, p. 23 and p. 56; Am. Jour. Med. Sci., 1920, Vol. clix, p. 503; Am. Jour. Med. Sci., 1920, Vol. clx, p. 515; Med. Clin. North America, March, 1921.
Meltzer, S. J.: Am. Jour. Med. Sci., 1917, Vol. cliii, p. 469.
MacNeal, J. J., and Chace, A. F.: Arch. Int. Med., 1913, Vol. xii, p. 178.
Oddi: Arch. ital. de biol., 1887, Vol. viii, p. 317.
Simon, S. K.: South. Med. Jour., 1921, Vol. xiv, No. 6.
Smithies, F.: Ill. Med. Jour., April, 1921.
Whipple, A. O.: Ann. of Surg., 1921, Vol. lxxiii, p. 556.

DISCUSSION OF PAPERS OF DRS. JONES, BOTTOMLEY AND WHITE.

DR. ELLIOTT C. CUTLER, Boston: I think that Dr. White's presentation of what the actual situation now is, in regard to the so-called Meltzer-Lyon test, is fair. He is a little more enthusiastic than we are, but then he has dealt with the more medical type of case than we have had experience with. My own experience has been with the surgical material that has come to the Brigham Hospital and chiefly with cases of stone in the common duct or gall bladder. After a year's trial we do not feel very enthusiastic. At the same time, I do not think that we should be quite so critical as Dr. Bottomley until more controlled data are available.

As to its therapeutic value, I have little knowledge. The surgical conditions of the gall bladder and bile ducts are not amenable to this kind of treatment. Our experience has been entirely along the lines of the value of this test in the diagnosis of such conditions.

It is very unfortunate that the people who began the work with the so-called Meltzer-Lyon test published their studies without careful controls. No one has published up to the present a series of normal cases. Until we know what the normal reaction is, we cannot translate the pathological conditions. We, therefore, spent much effort doing normal cases and did some twenty cases until we had established what we thought was the normal sequence in the color and quality of bile obtained. This factor was the only one on which we could place reliance. I don't believe that the study of the cells amounts to anything. I am not an expert on renal diagnosis, but the analogy to renal diagnosis by a study of urine sediment is obvious and I don't believe people can tell, by looking at the small round cell or the large round cell in the urine what part of the kidney is diseased, still less by what mechanism.

As to the bacteriological studies, we have not had satisfactory comparative results. Whipple, of New York, reported that he nearly always got the same bacteria in the excised gall bladder as in the bile ducts. We have been able to get bacterial growth in only 50% of the cases and in these cases there have been some obvious contaminations. Moreover, the organisms obtained by the test and from the excised gall bladder have not always been the same. It is a well known fact that bile is an inhibitor of bacterial growth and very few organisms grow well in bile. We are of the opinion that there is a great deal of bacterial contamination.

After establishing the reaction in normals we went on to pathological cases and have studied thirty cases in which we have taken out the gall bladder and studied it for comparison with preoperative study. If one performs this test on a large series of cases and doesn't know what the gall bladder contains, the tests add little to our true knowledge. The actual condition must be checked up by operation or autopsy.

The only criterion on which we think we can place reliance is the evidence of stasis. With stasis the test shows abnormal bile, no gall bladder bile or no bile, according to where the obstruction occurs.

One finds an abnormal bile containing a varying sediment in cases of gall bladder disease. The sediment may actually contain gritty particles and the bile is usually dark or black and more viscid. We have seen a definitely abnormal bile only a few times. One cannot make a diagnosis of stone with this test. We do, however, make a diagnosis of gall bladder disease and in the few cases of this type we have always found gall stones.

The common finding is to get no gall bladder bile. These cases show a steady flow of light yellow brownish bile, gradually becoming lighter, which will continue indefinitely. In these cases we make a diagnosis of obstruction of the cystic duct. I think

there are about eighteen cases in which we have made this diagnosis. Only once have we been mistaken and found no pathology. What causes the obstruction is quite a different thing. In our cases it was usually due to a gall bladder with stones in which there was sedimentation of fine stones in the ampulla and at the beginning of the cystic duct or actual impaction of stone in this duct. It is not true that duodenal ulcer gives an abnormal test. However, "transduodenal bands" may do this, or even cholecystitis with much mucus.

There is further the condition in which no bile is obtained. These cases are those in which cancer or common duct stone is suspected and in which any aid in differential diagnosis would be most valuable. Usually such patients are deeply jaundiced and many lack a characteristic history of colic. In common duct stone if magnesium sulphate does inhibit the sphincter, we would always get bile, and one could thus differentiate between cancer and stone. It was our hope that in this special field the test might find its chief usefulness. We had, however, a case in which no bile was obtained and the diagnosis of cancer was made. Operation revealed a common duct stone. On the other hand, there were two cases in which repeated tests showed always a little bile and in which we therefore made the diagnosis of stone although previously operation had been thought inadvisable since the diagnosis of cancer seemed definite. Operation here showed stone.

I cannot agree that the Meltzer-Lyon test is a simple manoeuvre. It necessitates x-ray visualization each time, repetition usually and a preliminary, thorough knowledge of the reaction in normal cases. With further study it may be shown that we have here a distinct aid in diagnosis. Until, however, a greater knowledge of the reaction in normal patients to this test is available and until better evidence of the existence of the law of contrainnervation in relation to gall bladder and the sphincter of Oddi is had, we should not place too much credence in it.

DR. MICHAEL F. FALLON, Worcester: I wish to congratulate the first two readers on the presentation of their papers; I may be pardoned if I don't discuss the last paper as I know nothing about it. But the first two papers are, I think, in line with the purposes for which this organization was founded —the presentation of papers which are orthodox and sound, right premises and sound conclusions; and I sincerely trust that these papers will be published in the BOSTON MEDICAL AND SURGICAL JOURNAL.

Dr. Halstead said some years ago that acute pancreatitis, just beginning to be understood, will probably soon become a household word; and it is the dissemination of just such knowledge as these papers contain that is going to keep the surgeons on their toes and keep the public on edge to send cases of pancreatitis to the hospital. Yesterday, a forcible remark was made by one of our members that the mortality in intussusception was reduced in the neighborhood of Clubbe and this was due to the education he had given to the laity, and we heard of the reduction of the mortality that resulted from his propaganda.

I will not go into the etiology of pancreatitis but I think we can conclude that pancreatitis may be either a blood borne infection from a certain focus or an infection from the lymphatics. We may liken the biliary apparatus, including the liver and the gall-bladder and ducts and the pancreas, to a two party telephone line, in that one may butt in on the other, and not infrequently in pathological processes of the biliary apparatus the panceas may participate; and that is seen when we think of the intimate lymphatic circulation between the biliary apparatus and the pancreas. It is astonishing how few glands there are there, and at times when one feels these glands swollen along the edge of the common duct and feels glands around the head of the pancreas we know that there is a peripancreatic adenitis and a peripancreatic lymphangitis and I think that the surrounding tissue may become infected there, and Deaver states that he has had an authoritative case of pancreatitis from a retroperitoneal lymphangitis from the appendix. We must bear in mind that the pancreas participates in systemic disease, noteworthily in syphilis and mumps and alcoholism and adiposity. Not infrequently the pancreas participates in these diseases, and it is fair to conclude that pancreatitis and acute pancreatitis may be present in these diseases.

Now for us the important thing is the treatment, and formerly the classical treatment was the drainage of the gall bladder on the theory that this would drain the pancreas, but now it is conceded that ectomy is the thing, to do away with source of infection, the gall bladder itself, and having removed the source, there is a possibility that the pancreas may take care of itself. We know, at least it is said by investigators, that a certain strain of streptococci is the most common cause of cholecystitis but that not in the free stream but rather in the wall of the gall bladder itself; and it has been proved recently by the injection of this strain in animals that they have an elective affinity for the gall bladder and a pancreatitis may result. The treatment: I think no one will dispute that the proper treatment of pancreatitis is surgical and that it is preferably the ectomy, the cholecystectomy, and in doing that the source of the pancreatitis is removed; and I will conclude by stating the advice given by Dr. Fitz. We all know that Dr. Fitz was a very conservative man, as regards surgery, that he at times was unwilling to permit or advise operations and quite rightly, but he said that pancreatitis—and, by the way, his writing on pancreatitis is still a classic and can be read with profit—and he said, "Fortunately, the exploratory laparotomy in an increasing number of cases has proven the most satisfactory method of treatment, and like most abdominal operations for the relief of acute symptoms, is the more helpful the earlier in the course of the disease it is performed."

DR. F. B. LUND, Boston: These cases of acute pancreatitis are of the greatest interest. Acute pancreatitis with its sudden onset accompanied by hemorrhage and fat necrosis seems to be the digestion of the pancreas by itself. It has been demonstrated by the experiment of draining the juice of the pancreas into the peritoneal cavity that no digestion takes place and the patient remains healthy. In order for digestion to take place there must be necrosis of the pancreas. Any cause which causes necrosis of the the whole or a small portion of the pancreas will make possible an acute pancreatitis. If, however, acute pancreatitis is caused by bile getting into the pancreatic duct, how do we account for cases in which it is localized in a small area not corresponding to the distribution of any large branch of the duct? If infection by entrance of bile does not cause it, how is drainage of bile going to help it? Since Opie's classical observation of pancreatitis in a case in which a stone so blocked the papilla of Vater that bile had to be carried up backwards into the pancreas, and since his observation and those of many pathologists and surgeons have shown the frequent coincidence of gall stones and poncreatitis, we have come to place too much stress upon this method of causation. But if we look over our records we will find many cases in which acute pancreatitis was not attended by gallstones or, as far as we can tell, by cholecystitis. I will also show some diagrams showing that in only a very small number of cases are the pancreatitic ducts arranged in such a way that blocking of the papilla of Vater either by a stone or by constriction of the sphincter of Oddi could force bile up into the pancreas. There

are many variations in the anatomy of the ducts, the duct of Wirsung and the duct of Santorini anastomosing with each other in various degrees and doing varying amounts of drainage service. In order to account for the cases of pancreatitis which could not be accounted for in this way, Dr. Deaver and others have advocated the hypothesis of the extension of the infection through the lymphatics from the gall bladder to the pancreas. These lymphatics are closely connected. We have all seen pancreatitis rsulting from the direct extension from gastric ulcer and Deaver states that he has seen it result from a retroperitoneal infection from appendicitis. From our study of gall bladder cases we know that the infection is often in the wall of the gall bladder and not in the bile stream, so that to prevent infection the removal of the gall bladder would be more logical than its drainage. Deaver advocates removal of the gall bladder. Archibald, on the basis of his experimental work advocates drainage. I have seen localized subacute pancreatitis apparently come on while I was waiting to operate on a patient with cholecystitis in which there was no jaundice, no blocking of the common duct. Fat necrosis occurred in the portion of the pancreas close to the gall bladder. These cases have led me irresistibly to believe in extension through the lymphatics. I do not advocate removal of the gall bladder in acute pancreatitis because that needs immediate drainage by opening the peritoneum over the pancreas and abscesses, if there are any, and affording free drainage to the surface. If there are stones in the gall bladder it should of course, be drained but I do not believe that this drainage has a curative effect on the acute pancreatitis. In regard to chronic pancreatitis, if the surgeon in operating for gallstones on other cases feels a large swollen pancreas he calls it pancreatitis. If such a patient dies the pathologist does not find pancreatitis and is disposed to criticize the surgeon. The fact is this large swollen pancreas which was found in the gall bladder cases is to my mind an inflammatory edema associated with infection and would quickly subside after death before the case came to autopsy. The pancreas begins to be digested after death to such an extent that it is hard to make definite autopsy findings in acute conditions. Postmortem findings show two kinds of chronic pancreatitis, in one of which, the interlobular variety of pancreatitis, the pancreas is harder and smaller than the normal pancreas. In interacinic pancreatitis the pancreas is hard. The interacinic variety is more apt to be associated with diabetes and the islands of Langerhans are infected. These two definite pathological entities are not what the surgeon generally means when he speaks of chronic pancreatitis.

Now if, as we believe, these acute inflammatory swellings are due to infection from the gall bladder and we find the gall bladder inflamed and thickened, then the logical treatment is to remove the gall bladder and the Mayo Clinic states that the majority of their cases are cured of pancreatitis by this method but there are certain cases where the common bile duct runs through the head of the pancreas so that its working causes obstructive jaundice.

In these cases the last thing to do is to remove the gall bladder. What we need to do is to make an anastomosis between the gall bladder and the duodenum in order to allow drainage. I have done a cholecysduodenostomy for what I thought was chronic pancreatitis with jaundice eight times and six of them have finally proved to be cancer. I cannot always tell the difference between the feeling of a cancer and chronic pancreatitis but the tumor in cancer gets very much larger. The localization of the tumor does not always help us for the cancer may be limited to the head of the pancreas or to the tail. Localization may be to the same portion of the head of the pancreas which is more commonly the localization of chronic pancreatitis. One reason for the pancreas getting better after removal of the gall bladder may be the fact demonstrated by Judd and Mann that there is dilatation of the common duct with stretching of the sphincter of Oddi which would allow free drainage.

DR. DAVID CHEEVER, Boston: I should like to ask Dr. Jones whether there is any contradiction in his two statements, that is, first, tenderness over the whole pancreas is an almost universal finding; and second, that the process in the pancreas may be often completely localized in one portion, usually the head. I can contribute a recent case in which there was practically no tenderness over the pancreas. The patient's symptoms were those of high obstruction with persistent vomiting, suggesting something at the pylorus. There was little or no evidence of any inflammatory condition. He went on for a number of days, as I recall it, without definite diagnosis being arrived at, and we finally performed a gastro-enterostomy under novocain to tide him over. But he died a few days later, and autopsy showed a necrosing pancreatitis pretty well localized about the head of the organ.

In this case the correct diagnosis was not made at operation as there was no fat necrosis, no tumor, and no swelling about the pancreas nor any lesion of the biliary tract. But in reviewing the case later, after the autopsy, I realized that certain adhesions which had been found between the transverse mesocolon and left leaf of the mesentery of the small intestine, and which made difficult the performance of the gastrojejunostomy should have led to suspicion of trouble in the underlying pancreas. I think this may be a useful diagnostic point after the abdomen has been opened in cases of obscure pathology where pancreatitis is possible.

DR. HUGH WILLIAMS, Boston: It seems to me that the diagnosis of gallstones, and their location, can be very accurately determined at the present time; and that the treatment is surgical and not medical.

I think, therefore, that the method used by Dr. White should be applied to the study of the pancreatic ferments, and to the diagnosis of pancreatic disease.

DR. JONES: In answer to Dr. Cheever's question, you would not, of course, have tenderness over the whole pancreas if only a very small area was involved, but in such a condition, I believe, that no diagnosis would be made, and no operation necessary. If the head or tail of the gland is involved, I believe that there is always tenderness over the pancreas at some time in the course of the disease. Late in the disease when much of the tissue has become necrotic, there is probably no definite tenderness, just as there is little after an appendix has become gangrenous and before peritonitis has started.

With regard to Dr. Lund's drawings, they are, I believe, no proof that pancreatitis cannot be caused by a backing up of bile into the pancreatic duct. It is true that the biliary and pancreatic systems can be made into one by a stone at the papilla in only seven out of two hundred individuals, as stated by Judd, but pancreatitis certainly does not occur in any such proportion of individuals as that.

Dr. Lund says that if the necrosis of the pancreas is owing to a backing up of bile in the pancreatic duct, it should be localized about that duct. It is true that we have very few autopsies to prove or disprove this statement. Opie, however, reports two cases which show this beautifully. In one the duct of Santorini is the main duct of the pancreas and the necrosis is limited to this duct, while in a second the duct of Santorini is very small and the necrosis is limited to that area. It would appear from these two cases that pancreatic necrosis is caused, in some cases at least, by infection or a chemical destruction through the ducts.

In regard to Dr. Bottomley's paper: We are in a very peculiar position in relation to cholecystitis. We are told in almost every paper on this subject that it is impossible to make a diagnosis at the time of operating. If this is true, should we not remove the gall-bladder whenever the abdomen is opened, just as we do the appendix? Dr. White has just said that in a certain number of cases the Vincent test was negative and the gall-bladder was found to be normal. How could that be determined without removal of the gall-bladder? As the gall-bladder must be removed to determine the condition, the test would be of no value. It is nearly time to begin to get the late results on our cases of cholecystitis, without stones. We will find, I am afraid, that they have not all been cured of their attacks of pain. If we continue to remove the gall-bladder when we have no definite evidence of disease we shall, I am afraid, find that in quite a proportion of these cases the pain has continued and our results will be bad just as they were when we did a gastro-enterostomy, when no definite ulcer could be demonstrated, and just as the results are bad when the appendix is made responsible for every pain in the right lower quadrant whether it shows any pathology or not.

DR. FRANKLIN W. WHITE, Boston: I am glad that Dr. Cutler who discussed the paper called attention to the different types of the medical and surgical cases; I think that is important in forming an expression of opinion about bile drainage. The types of liver cases on the medical side of a hospital are frankly different from those on the surgical side. I think in the medical cases, the milder types of cholecystitis and cholangitis, the examination of the cells in the bile sediment is useful. Of course, any medical series of cases suffers from comparison with a surgical series because we have no operative check, we have a group of cases in which we are not *absolutely* sure of the diagnosis, so the medical men had best be very conservative, as in the case of peptic ulcer before we had the x-ray.

I will say one word about treatment—I believe that the infections of the bile passages are usually surgical but I do not believe they are always so. For example, we do not operate on catarrhal jaundice and there is no question that some of the milder gall-bladder cases get well under medical treatment. If there is no obstructive condition in the bile passages, and if we can get free drainage through the tube, it is well to give this treatment a trial instead of resorting to surgical drainage. Of course, it is not well to try this kind of medical treatment on the frankly surgical case, but I feel that it will have a place in some of the milder and earlier types of cholecystitis and cholangitis, and having watched the results in such patients, we see definite, clean-cut results within a month or two, following this treatment. We see the jaundice clear up; we see the bile which was full of bacteria and cells gradually get clearer and clearer until nothing abnormal is found, and we see the symptoms gradually disappear until the patient considers himself well again; and I don't see any way to get around these facts.

I have been forced to carry out this treatment not from choice but from necessity in two patients with gallstones. There were reasons why they should not be operated upon; and following, or as a result of this bile drainage treatment, the acute symptoms entirely disappeared, the stones became "latent" and have remained so for more than a year and the patients consider themselves well as far as the digestive tract is concerned. This is not a plea for the use of medical biliary drainage in gall-stones, but a record of sequence or results in two hospital cases.

Original Article.

CLINICAL NOTES ON HEARTS IN HYPERTHYROIDISM.

BY BURTON E. HAMILTON, M.D., BOSTON.

[From Dr. Lahey's Thyroid Clinic.]

THERE is a general agreement that hearts are profoundly affected by hyperthyroidism. There is no accepted clear understanding of the nature of the effect of hyperthyroidism on hearts.

It is clearly of considerable clinical interest to know whether or not hyperthyroidism damages the heart; if there is damage, to what extent it is disabling, and what effect treatment may have in controlling it.

It is the purpose of this paper to record a few clinical observations made from the writer's personal examinations of over 200 hearts in hyperthyroidism in the clinic of Dr. Frank H. Lahey. No attempt is made to refer to the literature on hearts in thyroidism.

These cases seem to fall naturally into two classes. There are very few intermediate cases.

The first class, which is much the larger, shows no evidence of heart damage. This class will be considered under the following headings: rhythm, enlargement, murmurs, signs or history of heart failure. These are the points one studies clinically to decide if any heart is damaged.

The rhythm of the heart beat in these cases shows nothing abnormal but a simple tachycardia. Simple tachycardia is a tachycardia hat varies in normal direction with rest, exercise, vagal stimulation, etc., and is otherwise regular. It is not evidence of heart damage.

These hearts do not show enlargement. This is said with a full knowledge of the difficulties of determining accurately the size of hearts on clinical examination, and of the confusion that results from attempts to determine fine changes in the size and shape of hearts. It is generally stated that hyperthyroidism causes enlargement of the heart, so perhaps the observation that the great majority of hearts in hyperthyroidism show no evidence of enlargement needs to be amplified. The following methods of determining enlargement have been used: with the patient squarely recumbent, the apex is inspected and palpated, and the left border palpated between ribs. The borders are percussed. In the great majority of cases the apex is in the fifth interspace—well within the nipple or mid-clavicular line, the left border not outside it, and though a strong impulse is usually felt, it is not, in the great majority of cases, stronger than is noted in normal people with the heart rate raised by excitement or exercise to somewhere near the rate that the hyperthyroidism case in question shows. Percussion shows no striking change in shape or

size. Teleroentgenograms of the heart have been made in a number of cases. This method of determining enlargement is of chief value clinically where the chest wall is so rigid or thick that satisfactory inspection, palpation, and percussion are impossible. (Thin chest walls are the rule in hyperthyroidism.) Teleroentgenograms have not disagreed with the other findings; the great majority of hearts in hyperthyroidism examined by this method have shown in each single case no striking alteration of the heart's outline. In contrast to the findings in cases of hyperthyroidism in this class, the same methods of determining enlargement of the heart used with patients suffering, for instance, from definite rheumatic heart disease, or prolonged hypertension, show enlargement clearly and satisfactorily in the majority of cases.

Systolic murmurs are the rule, but they resist classification. Such murmurs are not in themselves, in the absence of other signs, evidence of heart damage. Diastolic murmurs have not been heard. Sharp or prolonged apical first heart sounds, such as are also common among young people with thin chest walls, or in neurasthenic states, are frequently heard. It is well known that these are not infrequently mistaken for presystolic murmurs, and considered to be evidence of mitral stenosis. There should be little difficulty in differentiating between these sounds and mitral diastolic murmurs to anyone familiar with both.

True signs, or history, of heart failure have not been found in this class. This class contains cases of all degrees of toxicity—up to death. It contains cases of long and of short duration. The writer has personally watched three cases in this class die. They were watched particularly for signs of heart failure. Two died of pure hyperthyroidism. One of these had a regular pulse rate that varied between 206 and 260 for 24 hours, until death; the other had a regular rate that varied from 195 to 220. Neither showed any signs of heart failure. The third died of broncho-pneumonia, without signs of heart failure.

It would appear that when cases in this class are cured of hyperthyroidism they are left with no demonstrable evidence of heart damage. To prove beyond doubt that they have no heart damage, many actual cases must be followed for many years. Unless such research proves otherwise, these cases should be considered to have sound hearts.

The second class shows definite heart changes. The whole adult community contains a small percentage of rheumatic heart disease (somewhere between one and five per cent.). Among this second class of cases of hyperthyroidism is a small number of patients with rheumatic heart disease, and hyperthyroidism added. This diagnosis has been made when history and heart findings clearly are sufficient to account for the heart condition found, without considering the hyperthyroidism. It does not seem suitable to attempt to enlarge on points used in diagnosis of rheumatic heart disease in this paper.

There are a very few borderline cases in this class where it is impossible to tell whether or not rheumatic infection is a factor in the heart changes.

Each case that the writer has happened to see of definite rheumatic heart disease, with hyperthyroidism, has shown auricular fibrillation. Auricular fibrillation occurs in only a small fraction of cases of rheumatic heart disease uncomplicated by hyperthyroidism. Signs of heart failure have been seen in this group.

A larger group of class 2 have definite hypertrophy and either paroxysmal or established auricular fibrillation, and no evidence of rheumatic or other heart disease. Signs of heart failure have been seen in this group. It is evident then that a number of cases of hyperthyroidism (about 10 per cent. in this clinic) have auricular fibrillation as a more or less direct result of hyperthroidism. Some clinical association of hyperthyroidism and auricular fibrillation has long been generally known. This class of cases contains patients of different degrees of toxicity, and of long or short duration of hyperthyroidism. So these factors alone do not determine the onset of auricular fibrillation. Other factors in the production of auricular fibrillation in hyperthyroidism are as follows: 1. The average age of the cases of hyperthyroidism showing auricular fibrillation is 20 years greater than the average age of all the cases of hyperthyroidism. Very few cases of hyperthyroidism over 50 years of age fail to show auricular fibrillation. 2. History of repeated tonsillitis or of rheumatic fever is commoner among the cases of hyperthyroidism with auricular fibrillation than among the cases of hyperthyroidism without evidence of heart damage. 3. Definite rheumatic heart disease has been mentioned above as a factor.

ANALYSIS OF CASES OF HYPERTHYROIDISM SHOWING AURICULAR FIBRILLATION.

It has been possible to secure data sufficient for some analysis of eighteen of the cases of hyperthyroidism showing auricular fibrillation.

Six of these had paroxysmal attacks of auricular fibrillation occurring at frequent intervals (hours or weeks) over a period varying from a few months to several years. The attacks lasted a matter of a few minutes to a few days. (The onset of any attack appears haphazard.) In one case the attacks occurred every seven to ten days and lasted about nine hours.

All of these cases have been relieved of hyperthyroidism symptoms by operative measures. Apparent cessation of the paroxysms of auricular fibrillation followed this relief. Elapsed time since relief of hyperthyroidism, and cessa-

tion of the attacks to this date, is from several weeks to several months. This time is short. But the relief from the attacks is very striking. The effect of digitalization on these cases also deserves notice. It has frequently been possible to digitalize patients promptly after the onset of an attack of paroxysmal auricular fibrillation. Nearly always the attack has ceased shortly after the ventricular rate has been slowed by digitalis. Where possible a single large dose of powdered leaf has been used. Occasionally a second smaller dose has been given after six hours. Often the attack has ceased before time came for the second dose.

The other twelve cases had established auricular fibrillation. Four of these had rheumatic heart disease. One of these four was not operated. One was operated and died. This case had shown signs of heart failure, though not for some time previous to operation. Of the other two operated, one stopped fibrillating after operation and relief of symptoms of hyperthyroidism (about six months ago). The other, and the one not operated, were still fibrillating when last seen. One of these had severe heart failure which cleared slowly with digitalis.

Of the remaining eight, three were not operated. All three continue to fibrillate. Of the remaining five, two stopped fibrillating, and have remained with a normal rhythm after relief of hyperthyroidism by operation, and digitalization. The change to normal rhythm has come two days to one week after operation, while digitalized.

Of the total seven hyperthyroidism cases with established auricular fibrillation, relieved of hyperthyroidism by operation, three have resumed normal rhythms. Of the four who did not, two had definite rheumatic heart disease. The other two have had auricular fibrillation for several years. None of these whose normal rhythm has been established has relapsed to date—the elapsed time since relief of auricular fibrillation to this date is respectively a few weeks, eight months, more than a year. Of thirteen with either paroxysmal or established auricular fibrillation relieved of hyperthyroidism symptoms by operative measures, nine have been relieved of auricular fibrillation.

Digitalis reduces the ventricular rate in all the fibrillators. All of these digitalized are conscious of and grateful for the slower rate. They have less disability. The ones cured of auricular fibrillation have all been conscious of, and grateful for, the change, and have apparently less disability. Digitalis apparently had something to do with the return to normal rhythm in those that were cured. The change to normal rhythm came while slowing of the ventricular rate, at least partly due to digitalis, was established. On resumption of a normal rhythm (after cure of auricular fibrillation) they have had a markedly higher ventricular rate in spite of being still digitalized. Another inference from this is that digitalization does not materially lower the heart rate in hyperthyroidism cases that do not have auricular fibrillation.

Conclusions

From personal examination of a large number of hearts in hyperthyroidism cases it appears:

1. The great majority of hearts in cases of hyperthyroidism are found with no evidence of damage. Heart failure is not found in this class of cases,—even where death occurs.
2. Hyperthyroidism in the presence of (a) rheumatic heart disease—(b) middle age (over 45 years), has a tendency to cause established or paroxysmal auricular fibrillation.
3. Many cases of hyperthyroidism showing auricular fibrillation are relieved of their auricular fibrillation after relief of hyperthyroidism by operative measurse, while digitalized.
4. Cases with auricular fibrillation without true signs of heart failure have stood operation well.
5. All auricular fibrillation cases with hyperthyroidism can be improved by digitalization. It is suggested that digitalization has a favorable influence on the cure of auricular fibrillation in hyperthyroidism.

This is in the nature of a preliminary report. It is intended to continue study of hearts in hyperthyroidism in this clinic for a long period.

Book Reviews.

Acute Epidemic Encephalitis. An Investigation by The Association for Research in Nervous and Mental Diseases. Report of the Papers and Discussions at the Meeting of the Association, New York City, December 28th and 29th, 1920. New York: Paul B. Hoeber, pp. xxii, 258.

Somewhat over a year ago, an association was formed for the purpose of research in nervous and mental diseases. The first meeting on the subject of "Epidemic Encephalitis" was held in New York in the latter part of December, 1920.

The volume before us is an epitome of the papers presented at that meeting. It represents the essentials of our knowledge of the disease up to that time. Papers were presented on the history, symptomatology, diagnosis, course, prognosis, morbid anatomy and etiology, with animal experimentation from persons particularly versed in these various phases of the subject. It is a significant contribution not only from the material, carefully correlated and arranged, but also as an example of the type of work which should be very much more extended.

Of particular interest is the discussion of pathological anatomy and of the experimentation at the hands of Drs. Israel Strauss and Leo Loewe, relative to the possible bacterial etiology of the disease. The difference of opinion between these observers and Dr. Harold L. Amoss of the Rockefeller Institute is well known, and leaves the subject still in an undecided state so far as these investigations go. The question and answer method used in developing the various topics is reproduced verbatim, which adds definitely to the readability of the book as a whole.

In general, the book is a notable contribution on an important subject; a carefully prepared and comprehensive bibliography adds to its value for reference purposes. This type of publication is an example which might well be followed in other departments of medicine. Should the plan be widely developed, it would give rise to a series of monographs of distinct credit to American medicine.

Anatomy of the Brain and Spinal Cord. By J. RYLAND WHITAKER, B.A., M.B. Lond. Fifth Edition. Edinburgh: E. & S. Livingstone. 1921.

Previous editions of this compendious manual of the anatomy of the central nervous system have been favorably reviewed in the JOURNAL. This fifth edition, after an interval of nearly ten years, is a welcome restoration to accessibility of a valuable brief monograph. In this book, both anatomic nomenclatures are used, distinguished by different type, so that each reader may easily choose which he prefers. Some new matter is added, and previous descriptions are rewritten and extended, to make obscure passages easier to understand. New tables are also given for quick and easy reference. The volume is illustrated by a series of 36 full-page plates, nearly all in colors. It is a work of admirable simplicity upon a highly complex and intricate subject.

Manic-Depressive Insanity and Paranoia. By PROF. EMIL KRAEPELIN; translated by R. MARY BARCLAY, M.A., M.B.; edited by GEORGE M. ROBERTSON, M.D., F.R.C.P. Edin. Edinburgh: E. & S. Livingstone. 1921. Pp. 280. Forty-nine illustrations, eighteen in color.

For lack of an English translation of the eighth edition of Kraepelin's Text-book of Psychiatry, his conceptions of the different forms of mental disease have been, by many, only superficially appreciated. This is especially true of manic-depressive insanity, although as to its main features his teachings have been generally accepted and adopted. The book is a companion volume to *Dementia Precox and Paraphrenia*, translated from the same source.

The author's abandonment of "involutional melancholia" as a special clinical form, and his inclusion of it as one of the phases of manic-depressive insanity, is frankly admitted and explained. Delusional mania and melancholia, together with confusional states, are also added.

Several problems remain to be solved, chiefly that of the morbid process underlying and unifying the various manifestations of the disorder, and also more exact differentiation of certain cases of dementia precox, amentia, and paraphrenia from manic-depressive insanity. The author lays stress on the important point that this disorder is, in general, independent of external influences, a fact which shows that the real, the deeper cause of the malady is to be sought in a permanent morbid state which must also continue to exist in the intervals between the attacks. There seems to be, therefore, some basis for the prediction that has been made that the roots of the disease will be found in the bio-chemical activities which form the basis of psychic life. In this connection, the chapter on Fundamental States, comprising the depressive, manic, irritable and cyclothymic temperaments, is an interesting and enlightening personality study.

Twenty pages are devoted to Manic States, of which the author gives four subdivisions: hypomania, acute mania, delusional forms and delirium. With less justification, he resolves the Depressive States into six forms, among which are "Fantastic Melancholia" and "Delirious Melancholia." The clinical importance of Mixed States is recognized in an interesting chapter of sixteen pages. Of these, eight subdivisions are made, with the comment that further characterization of individual forms is inadvisable at present. Clinically, they would seem valueless. As regards their frequency, in 899 of his cases, 440 were of the depressive, 149 of the manic, and 310 of the mixed type. The fact is emphasized that the delimitation of the individual forms of the malady is, in many respects, wholly artificial and arbitrary.

Kraepelin admits that we are in complete uncertainty as to the psychosis, both the frequent return of the attacks and the peculiar alternation of excitement and inhibition being complete enigmas.

In the chapter on Diagnosis, the author clearly, and in detail, differentiates the disorder from many other mental states: neurasthenia, "moral insanity," querulent delusion, compulsive neurosis, cerebral syphilis, arteriosclerosis, confusional insanity, hysteria, psychogenic depression and mental defect. For his views on its diagnosis from dementia precox, the reader is referred to the companion volume above mentioned.

The last quarter of the work is devoted to the consideration of Paranoia. Here his views are equally sound. Stripped of its former excrescences in the shape of "paranoid" states, alcoholic and syphilitic psychoses, and especially a series of psychogenetic forms of mental disease, the true paranoia of Kraepelin now stands as a relatively uncommon, circumscribed, degenerative disorder, the prominent feature of which is the insidious development of a permanent and unshakable delusional system resulting from purely internal causes, and accompanied by perfect preservation of clear orderly thinking, willing and acting.

The author considers the Freudian doctrines, as applied to paranoia, to be unsupported either by a clearly defined conception of the disease or by evidence at all acceptable.

The translation is everywhere accurate, but more literal than clear, and not a few sentences are cumbrous. These are, however, minor flaws in an otherwise admirable piece of work.

Current Literature Department.

ABSTRACTORS.

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THE DUODENAL TUBE: ITS USE IN DIAGNOSIS AND TREATMENT.

At a recent meeting of the Suffolk District Medical Society, DR. CHESTER M. JONES presented a paper on the use of the duodenal tube in diagnosis and treatment.

As an introduction, he outlined briefly the history of various methods of obtaining contents of the duodenum, with the final evolution of the present duodenal tube, introduced by Einhorn, and later slightly modified by Rehfuss, Lyon, and others. The most satisfactory method of introducing the duodenal tube into the duodenum was then outlined in detail, especial emphasis being laid upon the use of the fluoroscope in establishing the actual position of the tube at any given time. In the event of a fluoroscope not being available, various tests were mentioned as indicating the presence of the tip in the duodenum. The presence of bile, an alkaline reaction, abdominal auscultation following the passage of air through the tube, etc., were all discussed, and a warning given against depending on any single sign as proof as to the position of the tube. The usual causes of delay—retching, profuse salivation, ptosis, sluggish peristalsis, pylorospasm, adhesions, coiling of the tube in the stomach, etc.—were considered, and the means of combating them outlined.

He then discussed the various diagnostic points to be considered in examining duodenal contents. Normal duodenal contents were described. The usual normal fasting duodenal contents are clear, yellow, alkaline, viscid, flowing in an intermittent stream, with occasional small flocculi, and with a specific gravity of 1.004 to 1.008. Variations from the normal curve of the tube, as seen by fluoroscope, were mentioned, and Palefski's work on the interpretation of abnormal angulation or distortion of this curve. The alkalinity of the duodenal contents was discussed, as entirely analogous to the acidity of the gastric contents. At the present time sufficient numbers of observations have not been made on this point, but it appears that the alkalinity of the duodenum is not to be interpreted as a function of gastric acidity and secretory activity, although influenced by this, but is distinctly a function of biliary and pancreatic activity. The importance of using the duodenal tube, to determine the presence or absence of bile in the duodenum in cases of long-continued, severe jaundice, was brought out. Valuable confirmatory evidence for or against complete biliary obstruction may thus be obtained. The activity of pancreatic enzymes was then noted, and the reliability of the various tests for pancreatic insufficiency discussed. Practically all of the methods previously evolved are of little value, on account of the fact that they are based on inconstant findings, or on only very gross qualitative estimations of enzymatic activity. The method recently published by McClure, Wetmore and Reynolds promises to be of value for two reasons: First, it shows only slight and reasonable variations in a large series of normal cases, and second, because it is quantitatively accurate, and takes into account the Ph of the duodenal contents, the instability of the enzymes, and necessity of uniformity in the media to be digested. Further results are to be looked for by this new method.

The method of "biliary drainage," as evolved by Lyon, was then discussed in detail. Lyon's technic, the use of a hypertonic solution of magnesium sulphate, and the segregation of A, B and C biles were outlined. According to Lyon's method, diagnosis of the level of biliary pathology is made by noting in the A, B and C fractions the amounts, color, viscosity, abnormal cytology, bacteriology, etc. In discussing Lyon's method of diagnosis Dr. Jones pointed out that certain reservations should be made. Experimental evidence of gall-bladder contractions, following the use of magnesium sulphate, he pointed out, is distinctly lacking. Even if normal gall-bladder contractions are increased by magnesium sulphate, such contractions must be extremely slight, according to all previous experimental work on normal gall-bladder contractions. The importance of this increase in gall-bladder contractions has probably been much overstressed. Furthermore, in the great majority of cases the sequence of A, B and C bile is not absolutely distinct, and separation of the three fractions is, to some extent, artificial, and varies with the individual observer. The so-called B bile, with its darker color than A and C fractions, is probably due to three factors,—an increased flow of bile into the duodenum, due to a relaxation of the common bile-duct sphincter, slightly increased gall-bladder contractions, and passive siphonage of bile from the gall-bladder. Attempts to decide upon the level of biliary tract pathology from the type of cells found in the sediment is probably as fallacious as attempts to localize genito-urinary pathology by the type of cells in the urinary tract. Too elaborate methods of attempting to obtain a sterile field for bacteriological examination were criticized as unnecessary and fallacious. Heavy growths of organisms in pure culture, or as a markedly predominating growth in cultures obtained under ordinary and simple methods of cleanliness and sterility, are undoubtedly of significance. Too much attention to bacteriological findings frequently leads to misleading conclusions.

A modification of the above method was then described. It consisted in the procuring of tractions before and after the use of magnesium sulphate solution, and in addition to examining for abnormal sediment and bacteriological findings, the various bile pigments were carefully estimated by simple spectroscopic or colorimetric methods. Studies made on various types

of diseased patients showed that a marked and definite increase in bile pigments in the duodenal contents takes place under certain definite conditions. Increased blood destruction, with or without liver damage; liver damage alone from various processes, in the absence of abnormal blood destruction; and biliary stasis—all resulted in the elimination of increased amounts of bile pigments in the duodenal contents. This abnormal pigment elimination was illustrated in cases of pernicious anemia, hemolytic jaundice, various types of hepatic cirrhosis or other involvement, and in cases of cholecystitis and cholelithiasis, and was carefully contrasted with normal controls. The frequent association of hepatic involvements in cases of chronic gall-bladder disease was particularly emphasized. By the above modification of Lyon's method, along with careful consideration of sediment findings, etc., it was pointed out that a much clearer idea might be obtained of the pathological physiology of biliary tract disease. The details of this work will be published in the near future in the *Archives of Internal Medicine*.

In discussing treatment by means of the duodenal tube, Dr. Jones pointed out that therapeusis by "biliary drainage" should be attempted only in carefully selected cases. Catarrhal jaundice, chronic cholecystitis with bile stasis, without liver involvement, and occasionally acute cholecystitis, if surgery is not immediately warranted, are all indications for duodenal drainage. So-called migrainoid types are probably relieved as much by the psychic stimulus of seeing bile drainage as by any real relief of local pathology. Cases in such a group, that by more careful study show evidence of biliary tract pathology, probably warrant the use of the tube. Cholelithiasis offers no logical basis for treatment by biliary drainage. Probably cases of chronic cholecystitis, with evident liver involvement, should have the benefit of operative treatment, with subsequent bile drainage by the duodenal tube.

The use of duodenal intubation in following cases of typhoid fever, and other processes apt to involve the biliary tract, was mentioned. Finally, the use of the tube was discussed as a means of alimentation in cases of pernicious vomiting of pregnancy, post-operative vomiting, stuporous conditions, etc., and rarely as a means of supplying fluid after other common methods had been fully tried.

In conclusion, the speaker emphasized the real value of the duodenal tube in selected cases, both for diagnosis and treatment. Its use should properly be limited to hospital clinics, or to practitioners having full access to a fluoroscope and technical assistance. Scattered observations made by men using the test only occasionally were not warranted, and would probably lead to misleading results.

The paper was discussed by Dr. Franklin White, Dr. McClure, Dr. Palfrey, Dr. Frederic Lund and Dr. Daniel Jones.

A Comparative Study of Syphilis in Whites and Negroes.

By Ernest L. Zimmermann, M.D., (*Archives of Dermatology and Syphilology*, Vol. 4, No. 1, July, 1921.)

There has been much speculation in regard to the variations in the reaction of persons to syphilis. Inheritance probably plays a part, and environment in its broadest sense, which includes occupation, habits, associated disease and the effect of treatment, influences the course of the disease. There may be added to these, the variation in strain of the spirocheta pallida, a conception apparently substantiated by recent animal experimentation. It cannot be assumed, however, that strains infecting the whites, except in so far as racial antipathy and the legal restrictions placed upon miscegenation prevent intimate personal contact between the races and pave the way for the evolution of strain variations.

In this paper, a comparative study of syphilis in whites and in negroes is undertaken for the purpose of emphasizing inherited racial differences in response to syphilitic infection. The author presents a review of investigations that have thus far been accomplished, besides presenting the results of the investigation upon the syphilitics of the Johns Hopkins Dispensary, where 1843 cases,—893 whites and 950 Negroes—were studied. The manifestations of the three different stages of the disease in both races were studied and compared. The following general conclusions were formed:

Primary Syphilis.—Extragenital infection is relatively infrequent in Negroes. Among them the age of infection is one or two years earlier than in the white population.

Secondary Syphilis.—Characterized in the Negro by marked polyadenitis, by frequent and severe osteo-arthritic symptoms, by the frequency of iritis, and by the high incidence of follicular and pustular syphilids. A striking racial peculiarity is the frequent occurrence of the annual papular syphiloderm.

Tertiary Syphilis.—Bone syphilis is the most frequent lesions of tertiary syphilis in the Negro, exceeding neurosyphilis, which in white patients comprised almost half of all late manifestations.

Cardiovascular syphilis is more frequent in the Negro, with an incidence of two to one in colored and white males, respectively.

Stricture of the rectum and elephantiasis vulvae are extremely common in the colored people.

Leukoplakia is rare in the Negro.

Tertiary adenitis is common in the Negro.

Neurosyphilis is more frequent in white patients than in Negroes. The Negro is less likely to develop tabes or paresis, while the large group of unclassed cases of cerebrospinal syphilis is approximately of equal frequence in the two races. In Negroes it is especially likely to manifest itself in the form of cerebral endarteritis.

Conclusion.—In respect to syphilitic infection there exist inherited biological differences between white and Negro patients. The Negro develops intense reactions on the part of cutaneous and osseous structures, and is relatively free from tabes and paresis. In white patients, syphilis more frequently runs its course with skin manifestations slight or absent, but there is a greater tendency toward the eventual development of tabes or paresis.

Disconnecting the Gastro-Enterostomy Stoma.

Webb, R. C. (*Surg., Gyne., and Obstet.*, December, 1921). This author presents a clinical and experimental study on this subject. Its indications are only in cases where a gastro-enterostomy has been needlessly performed under a mistaken diagnosis, and does not apply in case of gastrojejunal ulcer following gastro-enterostomy.

The writer states that gastro-enterostomy should not be performed without demonstration at the time of operation of the definite indication or lesion; disconnecting gastrojejunal stomata should be preceded by most careful clinical and laboratory studies; from the three clinical cases cited it is seen that the closure cated and that it is a safe procedure: the results in the three clinical cases and the two animal experiments prove the value of the use of a cuff of stomach wall and the efficiency of the method to prevent con- of gastro-intestinal anastomoses may often be indistriction: the Andrews operation, with the slight modifications suggested, should become a standardized procedure as long as the indiscriminate use of gastro-enterostomy, without indication, is continued.

Microscopic examination of the cuff or stomach tissue included in the jejunal suture shows that this does not form a basis of new ulceration, nor does it in any way interfere with the function of that particular part of the small intestine. The glandular area of the stomach remains practically normal in appearance even in its new position. The operation would, therefore, seem safe and valuable. [E. H. R.]

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DOMICILIARY TREATMENT OF TUBERCULOSIS.

THE State of Massachusetts has such remarkably good facilities for the sanatorium and hospital treatment of tuberculosis that we are at times apt to forget that the patient's stay in a sanatorium or hospital is but a part of treatment, the most important parts of which come before and after his entry into the sanatorium. Despite the fact that the majority of those in a position to speak with authority on this subject believe that practically every patient should have the benefit of sanatorium treatment and the lessons which can be learned only at a sanatorium, the fact remains that home treatment will always play an important part in the welfare and health of the consumptive.

The secret of home treatment depends upon the faithful attention to detail. Physicians are apt to tell their patients to lead a quiet, restful life and too often forget to tell them how to do so. Take the question of rest, for example. It is perfectly possible for a patient to spend twenty-four hours of the day in bed and yet not be at rest. The recent work of Gerald Webb, of Colorado Springs, has taught us a great deal about absolute rest. According to his method, by means of bags of short or varying weight placed over the affected part of the lung so that this part is used less than a sound lung, and by means of sandbags so that the arms and legs are kept absolutely quiet, a condition of approximately absolute rest can be obtained. This treatment is only possible for a few minutes at a time, at first, the periods during which it is carried out being gradually lengthened. Excellent results have been recorded in the case of patients who had reached a stationary condition under what was formerly erroneously called "absolute rest in bed."

The question of exercise is one needing careful supervision. Doctors are apt to tell their patients to take a short walk, but they do not tell them how long or how short this walk should be. They do not tell them that a five-minute walk in wintertime, with ice, snow and wind, is equal to a fifteen-minute walk in milder weather and under better conditions.

Diet is another part of treatment which too often is left with vague generalities. The patient is told to take milk and eggs, butter and cream, and in other ways to live on a wholesome, nourishing diet. This means much or little, as the case may be. The world is full of dyspeptic consumptives who can lay their ills in this regard at the door of their physicians. The patient is very apt to argue that if one quart of milk a day does a certain amount of good, four quarts of milk would do four times as much good, etc.

In this era of therapeutic nihilism we are apt to discount the value of drugs. Tonics, such as Nux and Gentian, the "Mixture 13" of the Massachusetts General Hospital, are thrown into the discard simply because we cannot prove to ourselves or demonstrate on guinea pigs or rabbits that they do good, and yet the fact remains that in many cases such tonics do good even if it is only because of the fact that the patient has been firmly and impressively told that the tonic will increase his appetite and will make him feel better. Christian Science of this type might well play a larger part than it does in our modern therapeutics.

Cough can often be controlled by simple, homely remedies, and, with a little instruction and help from the physician, the raising of sputum and the coughing spell which the average consumptive is bound to have, can be reduced to a minimum, or at least can be made a periodic affair, morning, noon and night.

Fresh air and cold air are commodities which are apt to be handed out rather too generously to patients exposed to our New England winters. The average patient and, indeed, many well people and physicians, seem to feel that air to be fresh must be cold. There are many consumptives, and, indeed, many of those who are not consumptives, who are sleeping, or attempting to sleep, between shivers, in the open air, who would be vastly better off in a warmer, comfortable room (which they are really long-

ing for), with less air and more comfort. As Dr. Chadwick, of the Westfield State Sanatorium, where there are over 200 children, has clearly demonstrated, extreme cold is devitalizing as well as extreme heat.

What has been said concerning cold air might well be repeated concerning cold water. There are a few people, consumptives and well people, who seem to enjoy and to profit by getting out of a warm bed into a tub of ice-cold water. There are many more individuals, consumptive and otherwise, who fool themselves into *believing* that they profit by such a procedure. There is an increasing sentiment and a sensible one, against this, however. This prodigal and wasteful expenditure of vital energy does not do good in the vast majority of cases.

The faithful attention to these subjects on the part of physician and patient will make the results of home treatment of tuberculosis better than they now are.

THE ALCOHOL QUESTIONNAIRE.

Efforts to demonstrate facts relating to medical practice are of value in proportion to the advantage of the application of the testimony. When the public was informed of the purpose of the *Journal of the A. M. A.* to get the testimony of physicians as to the value of alcohol in the treatment of disease, there were varying opinions of the benefits to be derived. That a certain knowledge has been acquired, is beyond question, but the knowledge seems to be a demonstration of personal interpretation of a problem and, in certain instances, in accordance with some prejudice.

From a psychological standpoint, it seems to be largely a question of how far physicians exhibit unreasoning conclusions, and it may be that the analysis is useful in so far as it may be used to estimate the attitude of doctors toward a medico-social problem. If that was the purpose of the A. M. A., no one should criticise it. If, however, the purpose was to determine the value of alcohol as a therapeutic agent, the method is open to criticism. The *Journal of the A. M. A.* is, of course, aware of the fact that a very small proportion of the practising physicians are competent to submit any drug to scientific analysis, and the result of the questionnaire demonstrates that there is no unanimity of opinion relating to the value of alcohol as a therapeutic agent. If the *Journal of the A. M. A.* had in mind the advantage of establishing the position of alcohol in therapeutics it would have been far better to have spent the money in employing experts in physiology and pharmaco-dynamics, under a commission, to state in scientific terms the effect of alcohol when used in the human body, and the indications for its therapeutic application, for although such statements might be repetition, they would be authoritative.

We do not ask the general practitioner for opinions on radium, the limitations of digitalis, the abuse of strychnia, nor the relative value of antiseptics, and general practitioners do not, as a rule, generally employ powerful agents except as they derive information from others as to their value. If the *Journal of the A. M. A.* had published the opinions of Cannon, Diner, Mallory of Washington, or Stockton of Buffalo, together with other scientific investigators, the value of alcohol in treating disease would be more clearly defined in the minds of practitioners, and the profession would not have been subjected to the ridicule which has been freely expressed.

The social aspect of the alcohol question is a subject by itself, and had better be dealt with as such. It rather seems now that the *Journal of the A. M. A.* should carry through and put the therapeutic value of alcohol before the readers, rather than leave the matter where it is.

INCOME TAX FACTS.

The new requirement of the income tax law that returns shall be made of gross income of $5,000 or more regardless of the amount of net income upon which the tax is assessed, necessitates careful computation on the part of the taxpayer. "Gross income" includes practically every dollar received by the taxpayer during the year 1921 in salaries, wages, commissions, rents, royalties, interest on bank deposits, cash dividends on stock, "or income from any source whatsoever." "Net income" is gross income less certain deductions provided for by the act, including all business expenses incurred in the conduct of a business, trade, profession or vocation.

Certain expenditures, however, are not deductible as a business expense when made for the purchase of articles more or less permanent in character, or for permanent improvement of property. For example, a merchant would not be allowed to deduct the amount expended in the erection of a new store, or a farmer the cost of a new tractor or thrashing machine, since such investments are held to be capital investments. The law expressly prohibits the deduction of family or living expenses, such as rent for a dwelling, repairs to a dwelling, cost of food and clothing for the family, education of children, servants' wages, and similar items. Amounts spent during the year 1921 for any of these items are not deductible.

NEWS ITEMS.

NORFOLK DISTRICT MEDICAL SOCIETY.—A meeting was held on January 31, 1922, at Tufts College Medical School. Dr. C. D. Knowlton presided. Dr. Abraham Myerson spoke on "Hemiplegia in Syphilis." He cited cases in which the hemiplegia seemed to follow encepalitis, gummata and arteritis — all of syphilitic origin. He discussed, especially, the cases over fifty years of age, which showed both the signs of syphilis and of arteriosclerosis. He believes that when both these conditions exist in the same patient who suffers from hemiplegia, that the syphilis may be of as great, or even greater, importance than the arteriosclerosis, as the etiological factor.

Dr. Timothy Leary described the types of hemorrhage usually found at autopsy. He emphasized the fact that death from hemorrhage of the brain was not nearly as sudden as some forms of cerebral edema. He also vividly compared the number of deaths occurring from the administration of arsphenamin and those from the administration of serum (anaphylaxis). For one death from serum in his whole experience, he has seen 17 from the various forms of arsphenamin, in the last few years.

Dr. Edward N. Libby discussed the papers. The usual Norfolk District supper was served after the meeting. Over 70 members attended the session.

JOSEPH I. GROVER, M.D.,
Correspondent for the Norfolk District.

WORCESTER DISTRICT MEDICAL SOCIETY.—The regular meeting was held Wednesday, February 8th, at 4.15 P.M., at Memorial Hospital.

Program: Empyema: Report of 100 Cases, Dr. Donald Adams; Embolic Pneumonia: Report of a Case, Dr. O. H. Stansfield; Caesarean Section in the Presence of Pneumonia, Dr. Walter Seelye; Sarcoma of Jaw (case report), Dr. Harold Gibby; Spinal Cord Lesions, Dr. Benj. Burley; The Whitman Loop Operation, Dr. C. E. Ayers; Why Wait for K. L. Culture Reports? Dr. C. B. Stevens; Pregnancy Complicated by Fibroid, Dr. Jas. O'Connor; A Case of Hodgkin's Disease Treated by Transfusion, Dr. Benj. Alton.

After the meeting the members were invited to remain for light refreshments and a "run together."

February 24th, at 4.30 P.M., in the Bancroft Ball Room, Dr. Joseph Colt Bloodgood, Johns Hopkins University, will give an illustrated lecture to which all doctors and dentists are invited. At 6.30 P.M., a complimentary dinner will be given to Dr. Bloodgood by the associated Medical societies, the Dental Society, Chamber of Commerce, and affiliated clubs. At 8.30 P.M., there will be a two-reel movie, after which Dr. Bloodgood will give an illustrated lecture—both open to the general public.

DURING the week ending January 28, 1922, the number of deaths reported was 226 against 217 last year, with a rate of 15.53. There were 35 deaths under one year of age against 32 last year.

The number of cases of principal reportable diseases were: Diphtheria, 60; scarlet fever, 50; measles, 96; whooping-cough, 11; typhoid fever, 3; tuberculosis, 54.

Included in the above, were the following cases of non-residents: Diphtheria, 3; scarlet fever, 7; whooping-cough, 1.

Total deaths from these diseases were: Diphtheria, 6; scarlet fever, 2; tuberculosis, 15.

Included in the above, were the following cases of non-residents: Scarlet fever, 2; tuberculosis, 2.

Influenza, 35 cases; 3 deaths. Lobar pneumonia, 33 cases; 11 deaths.

DURING the week ending February 4, 1922, the number of deaths reported was 229 against 231 last year, with a rate of 15.64. There were 38 deaths under one year of age against 36 last year.

The number of cases of principal reportable diseases were: Diphtheria, 84; scarlet fever, 58; measles, 106; whooping-cough, 7; typhoid fever, 2; tuberculosis, 31.

Included in the above, were the following cases of non-residents: Diphtheria, 6; scarlet fever, 13; tuberculosis, 2.

Total deaths from these diseases were: Diphtheria, 4; scarlet fever, 1; measles, 1; tuberculosis, 14.

Included in the above, were the following cases of non-residents: Diphtheria, 1; scarlet fever, 1; tuberculosis, 1.

Influenza, 148 cases; 3 deaths.

THE INTERNATIONAL JOURNAL OF PUBLIC HEALTH.—The supplement to Volume II, No. 6, publishes the announcement that with this issue, the *International Journal of Public Health* ceases.

ANTI-PNEUMONIA VACCINE.—Dr. Park, Director of the Bureau of Laboratories of New York City, has prepared a vaccine which, he claims to have definite value in protecting against pneumonia, and this is endorsed by Dr. Copeland, Commissioner of Health. Three injections are required at intervals of four or five days. The Health Department is making strenuous efforts to produce a sufficient supply of the vaccine. Dr. Copeland claims that the vaccine will protect against pneumonia in "a very large number of cases," and even if pneumonia develops, the vaccinated patient is likely to exhibit a milder form of pneumonia than would otherwise be expected. Special stations will be established for distribution of the vaccine for those unable to pay for it.

Physicians are being furnished with the vaccine.

The vaccine contains varieties of pneumococci known as Types I, II and III.

Rockefeller Institute for Medical Research.—The twentieth anniversary of the foundation of this organization was celebrated January 20, 1922. Brief speeches were made by John D. Rockefeller, Jr., and Dr. William H. Welch.

Mme. Curie.—The French Academy of Medicine has broken away from its traditions and elected Madame Curie to membership. She is the first woman to be thus honored.

Worcester State Hospital Staff Meeting.—Dr. Frank E. Stowell was the speaker at the Staff Luncheon at the Worcester State Hospital, on February 3rd. The subject of his talk was "Electrotherapy." New forms of treatment were explained, and a discussion followed.

The *New York Medical Journal* presents a sarcastic criticism of the book reviews which appear in medical journals, and states that reference to a mis-spelled word is about the only resource of the critic. The statement is made that "the average medical book review is a perfunctory insult to the intelligence of the audience."

The reviews in the Boston Medical and Surgical Journal should be read by the editor of the *New York Medical Journal.*

In recognition of the work done by Dr. Henry Pickering Walcott as a public health administrator, the fund for the establishment of the new school of public health will be known as the Henry Pickering Walcott fund.

For over thirty years, Dr. Walcott's name was associated with public health activities in this state, and his reports of the State Board of Health stand as models which were an inspiration for health organizations throughout the world.

This fund has been augmented by the Rockefeller Foundation gift of two million dollars. Dr. Walcott is senior member of the Harvard Corporation.

SURGICAL SECTION SUFFOLK DISTRICT MEDICAL SOCIETY.

A meeting of unusual interest will be held February 23 at the Medical Library, at 8 p.m. Dr. Joseph C. Bloodgood, of Baltimore, will speak on Border-Line Breast Tumors. There will be lantern-slide illustrations.

Note: The attention of the profession is called to the small attendance at previous meetings. At a recent meeting, Dr. Downs, of New York, had an audience of only forty. About a year ago, when Dr. Gibbon, of Philadelphia, spoke in Boston, only twenty-five attended. Boston should extend a courteous welcome to visiting men from other cities. Eminent men should have the encouragement of a large audience.—Editor.

MEDICAL NOTES.

For the ten months, January to October, inclusive, for 1921, Massachusetts had, for diphtheria, a case rate of 209 per 1,000 of the population.

Panel Fees in Great Britain.—The Annual Panel Conference has agreed to accept a reduction from 11s. to 9s. 6d., on patriotic grounds.

Health Notes

Some writers on health topics contend that meat is an indispensable food. While it has recognized value, it should also be accepted that milk is one of the richest foods in calcium, which is an essential bone-building nutrient. This is one of the reasons why milk is good for growing children. There is no better food for the growing child than good, fresh milk. It is cheaper than meat and with bread, butter, vegetables and fruit, makes the ideal diet for promoting physical health and vigor. Read what Dr. Stephen Smith says in his statement regarding milk.

Keeping out fresh air and sunshine makes it easier for the undertaker to get in.

Acute respiratory diseases are more common in cold weather, due in all probability to two factors—poorer ventilation and lowered resistance. In warm weather, ventilation is the rule and out-door life promotes better health conditions. A well-functioning human being can maintain health in winter if judgment is exercised.

Milk is almost an essential food but we take it on faith because it looks white. There is no color index for infected milk. Pasteurization should be as universal as cooking beef.

PUBLIC HEALTH AND ANILIN DYES.

At first thought, there seems to be no very close relation between public health and anilin

dyes. But not many people know that they are used in any way to protect the public health.

If there is diphtheria or tuberculosis in a family, the physician will endeavor to have cultures made and scientifically tested. When the bacteriologist in the public health laboratory receives a culture to test for diphtheria, or a specimen to examine for tuberculosis, he must put this material under the microscope in order to make a diagnosis. Now, bacteria are very small, colorless objects that look nearly all alike. In order to distinguish one from the other, the bacteriologist has to color them with certain stains. The stains he most frequently uses, known as fuchsin, methylene blue and gentian violet, are all anilin dyes. Without them he could not diagnose these samples for diphtheria and tuberculosis, and would be equally crippled in the examination of certain other material that comes in to him regularly. Furthermore, some of the anilin dyes are proving to be valuable medicines, as they are toxic to certain harmful bacteria.

Before the war, the bacteriologist always obtained his stains from Germany. When the war broke out, and the stock of these standardized and reliable German stains already in the country gradually became exhausted, the bacteriologist had a hard time finding what he needed for this important work. As a result, vital public health work suffered.

The first attempt to standardize these stains was made by the Society of American Bacteriologists. With the assistance of certain dealers in biological stains, they have been working on the matter for about a year and find that American manufacturers have already met the bacteriologist's needs in an admirable way. A little standardization is all that is now needed. The work that has been done in this way by the bacteriological society appeared so important that the National Research Council of Washington, D. C., offered to take it over so as to put it on a broader basis and place facilities at the disposal of the worker which were not available to the bacteriological society alone. Under this new arrangement the work has been organized on a broad basis, with the coöperation of the Department of Agriculture and several of the large national scientific societies, besides the Society of Bacteriologists. The hope of the committee in charge of this work is not only to standardize the stains and to secure American products as good as Germany can produce, but to secure the production of the biological stains in this country decidedly better than those available before the war.

The principle on which biological staining rests is that the protoplasm in cells of different tissues of the same animal or plant, or of different one-celled organisms, such as bacteria and protozoa, reacts differently toward certain chemicals such as fuchsin, eosin, etc., so as to color the protoplasm differently. That is, protoplasm of different sorts takes up these dyes differently. These dyes thus bring out otherwise invisible qualities or structures in protoplasm (which is the fundamental organic substance of which all plants and animals are composed) in a somewhat similar way to that in which a developing wash brings out the light effects in a photographic plate or the lines in an otherwise invisible cipher writing. But the effect of these dyes upon protoplasm is so subtle that the slightest differences or irregularities in the composition of the dyes are likely to produce varying results in staining. It is, therefore, imperative to use perfectly uniform or standardized dyes for these purposes.

ELIMINATION OF CARBON MONOXIDE.

In addition to studies on carbon monoxide, Dr. Yandell Henderson and Dr. W. Haggard, as consulting physiologists of the Bureau of Mines, in work done at the Laboratory of Applied Physiology at New Haven, Conn., on the problem of the elimination of carbon monoxide from the blood after a dangerous degree of asphyxia, have determined that ventilation of the lungs could be increased from 300 to 400 per cent. by adding 6 to 10 per cent. of carbon dioxide to pure oxygen. These investigators have also shown that the effects of carbon monoxide upon the heart are not specific, but are secondary to general asphyxia and a terminal failure of respiration. Material is now available for a report showing that symptoms and effects sometimes assigned to chronic carbon monoxide poisoning are in reality due to the effects of benzol and related substances in illuminating gas.

DON'T WAIT FOR DIPHTHERIA.

All things come to those who wait, but diphtheria may come without waiting. Therefore, be protected; get the child immunized and made proof against it for all time. Have the doctor do it and *do it now.*

Once in a while, as the Chicago Department of Health Bulletin says, a person is met who decries diphtheria antitoxin because it is a poison. The answer is that *diphtheria is the poison* and one that kills; that antitoxin is antipoison given to counteract and *cure one* who is *already poisoned.*

How many are lost through not having the

antitoxin given early and not in large enough doses! Early and large doses *have a reason.* When diphtheria sets in, *the toxins become fixed in the tissues* and are there converted into toxone. Antitoxin will *not correct if the toxin has become so fixed.* Therefore, *give early* and *quick.—Buffalo Sanitary Bulletin.*

PUBLIC HEALTH.

PUBLIC HEALTH is the science and the art of preventing disease, prolonging life and promoting physical health and efficiency through organized community efforts for the sanitation of the environment, the control of community infections, the education of the individual in principle of personal hygiene, the organization of medical and nursing service for the early diagnosis and preventive treatment of disease, and the development of the social machinery which will ensure to every individual in the community a standard of living adequate for the maintenance of health.—*C. E.-A. Winslow.*

PHYSICAL STANDARDS FOR CHILDREN.

THE U. S. Public Health Service has for a long time been occupied in various parts of the country in an investigation of physical standards for children.

Before relief can be fairly applied to children, it is necessary to know whether or not a particular child really needs it.

The common test of a child's health development, and about the only test that can readily be applied to children in mass, is to ascertain by some standard table of age-weights prepared for the purpose, whether or no they weigh as much as they should at their age. If the child is 10 per cent. or more under standard it is considered to be undernourished and is treated accordingly.

Some of the age-weight standards used in the United States are merely averages of all classes of children, including with the well, those who have hampering physical defects and those who are actually undernourished. They probably never did apply to all parts of the United States and quite possibly they no longer apply even to the particular part for which they were originally devised.

The population of the United States is very varied. It comprises lanky New England fishermen, short strong Italians, heavy, broad-shouldered Germans, small lithe Cockneys, and men of many other racial strains (not to mention a few ancestral Americans)—and blends of them all. Moreover, it lives under many different climatic conditions, wet or dry, cold or hot; and it lives on diets that in one section depend largely on meat, in another on sea food, in a third on cornmeal and pork. All these conditions are more or less local and all tend to produce children whose physique conforms to a local and not to a general standard.

In view of this, the Public Health Service is making studies of the physical development of normal children in different states and is accumulating data that may serve as a basis for a possible (though unlikely) general standard or for a number of standards which may apply to more or less homogeneous parts of the country and may indicate, far more accurately than any existing standard, the physique of the normal child by which the condition and nutritive needs of the particular child may be judged.

These studies comprise the making of physical measurements of all children and of collating them according to race, sex, age, habitat (city or country), and ancestry (native born of American-born parents, native born of foreign-born parents, or foreign born of foreign-born parents). The data obtained should help to determine the influence of the different racial types and of immigration as a whole on the national physique.

One state where such an investigation is being made by the Public Health Service in cooperation with the State Board of Health, is Florida, where the population is largely homogeneous. A state-wide investigation, now in progress, concerning children's problems, particularly the effects of physical defects and septic mouth conditions on nutrition and development, is being supplemented by careful physical examinations and measurements in two counties of all school children; and from this, it is hoped that a standard for the state and the region may be framed.

Obituary.

JOSEPH MACDONALD, M.D.

DR. JOSEPH MACDONALD, managing editor and publisher of *The American Journal of Surgery*, and co-publisher of *The Medical Pickwick*, died suddenly, in his office, on January 7th, of cerebral hemorrhage, at the age of 51.

Dr. MacDonald was born in Branchville, Sussex County, New Jersey, in 1870. All his adult years were spent in medical journalism. He rose from office boy to manager in the office of the *International Journal of Surgery.* In 1905 (meanwhile having received his degree in medicine), he resigned from that position to establish the Surgery Publishing Co., and the *American Journal of Surgery* (formerly the *American Journal of Surgery and Gynecology*). From the outset he associated

with himself a New York surgeon, Dr. Walter M. Brickner, as the editor-in-chief, and the Journal early acquired esteem through the high standard of literary critique it has maintained. In 1915, in association with Dr. Sol. Martin, of St. Louis, Dr. MacDonald established the *Medical Pickwick*, a monthly magazine of medical wit, humor, verse, history and biography.

Dr. MacDonald was ex-president and, for many years, secretary of the American Medical Editors Association, an organization in which he was deeply interested and in whose affairs he was an active and earnest factor.

An officer in the Medical Reserve Corps of the U. S. Army since 1909, upon our entrance into the war he was commissioned a captain and, in December, 1917, a Major. Long before he was assigned to active duty, and continuously thereafter, he did great service to his country, by conducting in his own publications and in member journals of the American Medical Editors Association, a very vigorous propaganda to stimulate physicians throughout the country to enter the military service. With the approval and assistance of Surgeon-General Gorgas, he prepared circulars and editorials setting forth the medical-officer needs of the growing U. S. Army, and striking epigrams and exhortations, to stir the conscience of laggard colleagues. During 1918, he was on active duty as a member, and then chairman, of the Army Medical Examining Board of New Jersey, and made an excellent record in the number of physicians he inducted into the service. Later, he was appointed a member of the General Board at Washington.

Dr. MacDonald was very active in Masonry and was Past Grand Commander of Knights Templars of the State of New Jersey.

A few months after his discharge from the Army in 1919, Dr. MacDonald suffered a cerebral hemorrhage, causing a hemiplegia, from which he recovered largely by dint of plucky perseverance — a characteristic that dominated all his activities. He was a hard worker and extremely energetic. Indeed, the arterial hypertension from which he died was, largely, a sacrifice to his overzeal. He was always genial, frank and optimistic.

Dr. MacDonald had a very "magnetic" personality. He had a host of friends, within and without his profession, who will mourn his early death.

He is survived by a widow and sister, Mrs. W. C. McKeeby, wife of Dr. McKeeby of Syracuse, N. Y.

Miscellany.

THE MEDICAL SCHOOL OF COLUMBIA UNIVERSITY.

COLUMBIA UNIVERSITY and the Presbyterian Hospital entered into an alliance under an agreement dated February 10, 1921, as shown in the following excerpts:

ARTICLE II.

The proposed new buildings of the Medical School of the University and the Hospital are to be built upon an agreed site. There shall be a division of the site between the University and the Hospital, and each is to acquire the portion assigned to it in such division at its own cost and expense. The portion assigned to the University is to be conveyed to, and be owned and maintained by, the Hospital.

The parties are within four months from the time this agreement goes into effect to proceed with the preparation of plans for the new buildings and the construction of the buildings in accordance with the plans adopted and continue such construction with due diligence to the completion of the buildings.

ARTICLE III.

The professional staffs of the Hospital are to consist of professors and other members of the staff of the Medical School of the University who are to be appointed by the Hospital on the nomination of the University.

ARTICLE IV.

In order that the permanent alliance of the University and the Hospital shall be maintained and effectively administered, an Administrative Board is to be appointed to consist of three Managers of the Hospital, and three Trustees of the University, with the Dean of the Medical School acting in an advisory capacity without voting power. The first Board shall consist of Edward S. Harkness, Henry W. DeForest, and William Sloane, representing the Hospital, and John G. Milburn, Walter B. James, and William Barclay Parsons, representing the University. In case of a vacancy by death, resignation or other cause, it is to be filled by the body that made the appointment; but the appointments made by the Hospital shall be subject to the approval of the University and those made by the University shall be subject to the approval of the Hospital.

ARTICLE V.

The powers of the Administrative Board are to be as follows:

1. A list of the members of the professional staffs of the University who are nominated by the University to constitute the professional staffs of the Hospital is to be submitted annually by the University to the Administrative Board for its approval before its presentation to the Hospital for its action under Article III.

2. To consider any objection made to any member of the professional staffs of the Hos-

pital and to report thereon with their recommendations to the University and the Hospital.

3. To examine and consider plans for the new Hospital and new Medical School buildings and to report thereon to the University and the Hospital with their recommendations.

4. Subject to the approval of the Trustees of the University and the Board of Managers of the Hospital, to determine from time to time the facilities and equipment for instruction and research in the Hospital; to apportion between the University and the Hospital any joint or common outlay or expenditure for construction, equipment or operation that may be found necessary by the mutual action of the University and the Hospital; and to exercise such other powers as may be conferred upon it from time to time by the authority of the Trustees of the University and the Board of Managers of the Hospital acting concurrently.

The agreement went into effect upon the raising of a fund of not less than $3,000,000.

The Rockefeller Foundation and the General Education Board have each pledged one million dollars. The Carnegie Corporation also pledged one million dollars, so that the required funds are available. Mrs. Stephen V. Harkness has provided land worth two million dollars for the Hospital and Medical School buildings. Mr. Edward S. Harkness has agreed to contribute to the University for the Medical School, one million dollars, and there is also available the legacy of the late Joseph R. DeLamar, of five and one-half million dollars and the income of the Harkness Fund of one and one-half million dollars, held by the Presbyterian Hospital for teaching and research in medicine.

The Administrative Board set up by the agreement lost no time in beginning work. Recently built hospitals and medical schools in this and in other lands have been inspected and the plans for the new undertaking are already under way. Three years will doubtless be needed to complete the new buildings for hospital and medical school, and to effect the transfer of both from their present sites to their new and permanent home.

CHIROPRACTORS IN CALIFORNIA.

A HARD fight is on in California for recognition of chiropractics. Last November, enough petitions were signed authorizing the placing of (in the 1922 ballot) a measure which, if adopted, will create a State Board of Chiropractic Examiners.

These signatures were obtained very largely by women and girls, who petitioned passers-by on the streets.

Chiropractors should never be favored by legislative class distinction. There should be one standard for all practitioners of medicine. Massachusetts will be assailed in turn.

Notice the articles by Severance Johnson on "Chiro-Quack-Tic," running in *Leslie's Weekly*.

RECEPTION TO PROFESSOR SCHLOSS.

ON Friday, January 27, a reception was tendered to Professor and Mrs. Oscar M. Schloss, at the Infants' Hospital. Many prominent members of the faculties of the medical schools, staffs of hospitals and boards connected with public health activities attended.

WHISKEY PRESCRIPTIONS.

JAMES A. STONE, Prohibition Director for the State of Wisconsin, is reported by the *Milwaukee Journal* to have stated that physicians in that State issued 720,000 prescriptions for whiskey in 1921.

Under the A.M.A. Questionnaire, it was reported that 359 voted against whiskey as a necessary therapeutic agent, and 342 in favor. There are about 2700 physicians in Wisconsin and if this vote is representative of the other half (for the questionnaire was sent to 1194, and 707 were returned), the believers in whiskey must have been very busy. Assuming that there were 1300 who prescribed whiskey at the usual fee for a prescription, the revenue must have kept the wolf from the door. It would be interesting to know the conditions for which the whiskey was used.

ORDINARY FACTS OF EXTRAORDINARY INTEREST.

WITHIN a period of ten years, four years have been added to male policy holders in one insurance company. If tuberculosis could be eliminated from America, there would be added three years to the average life of the population.

The elimination of other preventable diseases indicates that life expectancy could be extended from fifty-one to an average maximum of seventy years.

The economic wealth of this country is increasing at the rate of one hundred dollars per person per annum. Keep the people alive and the country will add to its wealth.

The average productive male member of our population is worth five hundred dollars per year.

Nine million men were killed in the World War. Expressed in dollars, one hundred and fifty-eight billion dollars worth of human lives were destroyed. Add to this the expense of the disabled, and the mind is confused. We are obliged to depend on politicians to prevent this wastage in the future. If the politicians were to be the first to be drafted, wars would be infrequent.

The money loss due to deaths from influenza in the last great epidemic is estimated at one hundred and seventy million dollars.

If progress continues in life-saving public health measures, there will be one hundred and

fifty-three thousand more lives saved in 1921 over the loss in 1920.

The deaths from the following diseases seem to show lowered rate: Influenza, pneumonia (all forms), tuberculosis (all forms), other respiratory diseases, Bright's disease, puerperal state, measles, whooping cough, meningitis (all forms), diarrhoea and enteritis, typhoid fever, cerebral hemorrhage, organic diseases of heart.

Causes of death showing an increase in the death rate: Cancer, suicides, homicides, automobile accidents and injuries, scarlet fever, diphtheria.

AN ACTIVE CAMPAIGN TO INCREASE MEMBERSHIP.

THE American Association of Industrial Physicians and Surgeons has assumed the task of doubling its membership, the minimum objective is for each member to secure one recruit. Every member of the Association, being in the active practice of industrial medicine, should be full enough of his mission to render this disinterested service. More than twenty-five hundred physicians in the United States are specializing in industrial medicine. The man who would credit the organization or whose work is a credit to the cause should identify himself with the American Association. It is desired that the men whose work renders them eligible, will make early application for membership.—*The Nation's Health.*

U. S. LIFE TABLES.

THE Department of Commerce, through the Bureau of the Census, announces the second official publication on life tables.

It is shown that mortality at practically all ages is higher among men than among women. In particular, it appears that the most favorable mortality in this country is found among women living in the rural districts. The rural classes, regardless of sex, enjoy a much lower mortality for nearly the entire range of life than those living in the cities. While the expectation of life, both among men and women, in most classes, has steadily increased, there is no indication of any definite lengthening of the span of life. In other words, while almost all classes of persons are living to an older average age, the limiting age of human life does not seem to have advanced.

In 1901 the expectation of life among white females at birth was about three years more than among white males, and in 1910 the excess in favor of the females had increased to almost three and one-half years. There seems to have been a general improvement for all classes for the ages up to about age 40 for men and age 50 for women, except for the negro population. Above these ages no improvement is shown, and in some cases the mortality at the older ages in 1910 was actually less favorable than it was in 1901.

An examination of the infant mortality tables indicates a decided improvement in the infant mortality rate in most classes of the population, between 1901 and 1910. The expectation of life of children born in 1910 also shows a considerable improvement over the expectation of life of children born in 1890 and 1901 in practically all classes of the population. The infant mortality in the rural districts was considerably lower than that in the urban districts, both in 1901 and 1910, but the difference in favor of the rural districts was not as great in 1910 as it was in 1901, indicating that the efforts to improve infant mortality conditions in our cities are undoubtedly meeting with success.

IMPORTANT HEARINGS.

House 181. Acceptance of the Sheppard-Towner Act.

Senate 259. The Spencer Maternity Aid Bill.

February 20, 10.30 a.m. Committee on Public Health and Social Welfare, sitting jointly.

February 16, 10.30 a.m. Joint Judiciary Committee. Senate 215. That cities and towns be made liable for damages for injuries caused by compulsory vaccination.

Committee on Public Health, March 6, 10.30 a.m. House 631. To regulate the practice of chiropractic and to provide for the examination and license of chiropractors and the appointment and maintenance of a Board of Examiners.

Committee on Public Health, March 1, 10.30 a.m. Senate 292. To appoint doctors in small towns. House 955. Bill amending the law relating to the registration of physicians. This is the bill advocated by the Committee on Medical Education, providing for two years of college work before the study of medicine is undertaken, and for a year's interneship. House 744. Directing the Department of Public Health to prepare and distribute anti-rabietic serum.

March 13, 10.30 a.m. Bill relative to the physical examination of pupils in the public schools. This bill substitutes "may" for "shall" in the present law.

EXCERPTS FROM "THE MEDICAL PRESS AND CIRCULAR."

THE epidemic of typhus fever in Moscow, to which Dr. Reginald Farrar, as noted in last week's issue of *The Medical Press and Circular*, fell a victim, is spreading unchecked.

IN order to keep the supply of probationer nurses up to the minimum demanded for the ward requirements of the London Hospital, 208 girls must go through the preliminary course annually. Last year, no more than 156 offered themselves.

It needs to be widely known that nursing is not an ill-paid profession, that the hours of duty are fixed, and the prospects good. At the London Hospital the scale runs thus:

For regular probationers, £30 for the first year, £35 the second year, £40 the third year.

Staff nurses in the hospital are paid at the rate of £60.

Sisters are paid £90 the first year, £100 the second year, rising to a maximum of £130 by £10 per annum.

Private nurses are paid £60 the first year, £70 the second year, £80 the third year, rising to a maximum of £90.

PROPAGANDA FOR REFORM.

Heliotherapy and Rickets. Evidence for the value of heliotherapy in rickets was presented years ago. This value has recently been verified by experiments on animals rendered demonstrably rachitic through dietary errors. When rats have an abundance of sunlight, they remain healthy under regimens which are sufficiently deficient in phosphorus to induce rickets in animals kept in subdued light. It has been shown that the changes produced by sunlight on the skeleton do not differ in any important respect from the changes produced when animals are fed cod liver oil. Again, sun treatment of infants suffering from rickets, not only brings about a cure of the rachitic lesions, but in so doing occasions chemical changes in the blood similar to those noted when the cure is effected by cod liver oil. Heliotherapy has thus, in one case at least, been put upon the scientific basis of demonstrable chemical changes in the organism affected (*Jour. A. M. A.*, Jan. 21, 1922, p. 195).

Antidote for Phenol Poisoning. Sodium sulphate in strong solution is one of the best-known antidotes for phenol poisoning. The action is not a chemical one. Alcohol is not an antidote for phenol poisoning. Experiments carried out in the U. S. Hygienic Laboratory showed that the toxicity of phenol was increased by alcohol. Alcohol is applied to the appendix stump after operation in the belief that it will neutralize the action of the phenol and thus prevent extensive sloughing of the tissues; but no doubt the action of the alcohol is simply that of diluting and washing away the phenol (*Jour. A. M. A.*, Jan. 28, 1922, p. 299).

PURPOSE AND SCOPE.

THIS is the second official publication issued by the Bureau of the Census on life tables derived from statistics of births, deaths, and populations. It was prepared by James W. Glover, expert special agent of the Bureau of the Census and professor of mathematics and insurance in the University of Michigan. It is intended to be of service primarily as an authoritative source of information to the public. Students of vital statistics, physicians, lawyers, sanitary engineers, sociologists, actuaries, mathematicians, statisticians, public health officials, and others interested in the improvement of public health, will find it particularly useful.

Correspondence.

ON THE PRACTICE OF MEDICINE.

Mr. Editor:

Even in the interests of clear thinking, let us hope that the *obiter dicta* of the present attorney-general of Massachusetts, as recorded in the JOURNAL'S leading editorial of January 19, 1922, will not be allowed to go unchallenged. To assume that the man who simply gives highly trained technical advice to a practitioner of medicine is himself thereby engaged in the practice of medicine is to badly confuse the meaning of the phrase, "the practice of medicine."

If "medicine relates to the prevention, cure and alleviation of disease, the repair of injury, or treatment of abnormal or unusual states of the body and their restoration to a healthful condition," then it logically follows that the "practice of medicine" is the application of this relationship. The recipient of that application must be the one in need, necessarily; while the agent through whom the application is made is the attending physician. That the attending physician then seeks the advice of one who is "learned and skilled" (whether in pathology or in some other branch of medical science) does not result thereby in the latter becoming perforce a "practitioner of medicine." I presume no one would contend that Professor Folin, for example, *ought* to be licensed as a practitioner solely because his advice relating to some phase of blood chemistry proved exceedingly valuable. But the same logic would hold concerning any advisory technician whether chemist, pathologist, toxicologist, medico-legal attorney, truss expert, orthopedic mechanic, or any "learned or skilled" individual consulted concerning some separate phase of the diagnosis. The distinction might well be drawn at the point of relative contact, to wit,—the practitioner studies the patient; the technician studies, not the patient, but such data as may be submitted by the practitioner; the physician studies the living tissue *en masse* and directly, whereas the technician studies sundry data derived secondarily. Surely, one who studies this disjoint data, only, cannot logically be said to be practising medicine, in any canonical sense.

Why not submit the question to the faculty of Harvard Law School, and so obtain a critical and analytical, but non-political, opinion?

Yours fraternally,

A. D. BUSH.

[NOTE. In Massachusetts, Boards and Commissions act in conformity with opinions of the Attorney-General until the laws have been interpreted by the courts. If any one sees fit to contend the opinion of the Attorney-General, the question could be brought before the court.—EDITOR.]

AN APPRECIATION.

Greenfield, Mass., January 24, 1922.

Mr. Editor:

Will you permit me to express, through the pages of the JOURNAL, my appreciation of certain changes in its conduct since it has become the official organ of the Massachusetts Medical Society?

The change that has appealed to me particularly is

the insertion of the many letters—controversial, hypercritical, and constructive—which have been appearing from week to week, and also your patience, good temper and courteous replies to many of these.

I know that the tone and contents of some of these letters must have hurt, because having worked on committees of the parent body and proven the inertia of so many of the rank and file, I know how easy criticism comes and how hard it is to get the necessary work properly subdivided. Nevertheless the appearance of these letters is a most hopeful sign of progress in the Society, for discontent is preferable to indifference.

A review of many of these letters indicates that the dissatisfaction is general, rather than specific, but the impression conveyed is that the Society is exclusive; is conducted like a close corporation: that it fails to so organize its members as to make opposition to encroachments from without ineffective; and that something should be done to revitalize it to the end that membership will mean more than just paying dues, receiving a JOURNAL and expressing periodical regrets that something different was not done.

The belief that the Massachusetts Medical Society is a Boston affair is of course not a new one, and though a ten-year tabulation of statistics based on the residence of the active workers among its officers, committees and writers in the JOURNAL might show a majority in the eastern part of the state, yet many of us know that this apparent centralization of activity is not from a desire to control, but because Boston is the place of headquarters; that scientific progress is more active and that proportionately there are more willing workers in urban than in rural communities.

Several years ago, during a three-year membership on the Scientific Program Committee, I endeavored to overcome this locality prejudice by getting a state-wide representation on the program of the annual meetings, but though I managed to accomplish a part of my plan, it was done only after overcoming a great deal of unwillingness of many members to avail themselves of the opportunity to do active work.

The same inertia was met later when, as a member on the Committee on Legislation, members were asked to voice their opposition to pending legislation, not by taking their time and means to go to Boston, but by the easier way of personal interviews with their local Senators and Representatives. The Optometry bill; the legislation permitting greater activities by the Osteopath and similar sects and the failure to get needed legislation to raise the standard of Medical Education are due, not to a lack of machinery in our Society for organized opposition, or incapacity of its committees on legislation, but because the mass of the units of the Society is indifferent and unwilling to step out of the routine rut of daily practice. If any reader of this is skeptical of the truth of this statement, let him get on one of these committees and investigate its activities from the inside.

Notwithstanding this experience it is possible that changes might be made, either in personnel or policies, that would arouse and maintain a more personal interest among the rank and file; such for example, a more careful selection by the District Societies of their Council members; a wider geographical distribution on the Society Committees, the holding of the annual meetings in Boston, Worcester and Springfield in successive years and also having at least a few of the meetings of the Council held in the two last named cities during the course of each year.

In addition, it might be well to ask ourselves whether the character of our annual meetings is not becoming obsolete? It is possible that the group educational plan, with intensive study for two or three days, would provide that annual post-graduate brushing up, for which so many of us crave, and to which many would look forward and make greater efforts to reach than they would to a program of stereotyped papers or crowded clinics, and which really centers around a "big feed" known as the Annual Dinner.

A few other possible changes are in mind, but this letter has grown way beyond its original intent, which was to urge you to get all the complaints from the individual members that you can. Print all letters, if they will pass the postal regulations erected to maintain decency; give us all the information you possess that will aid in the removal of misunderstandings and clarify disputed points, and pass along through the proper channels any constructive suggestions that will make our State Society, not a vague, intangible, abstract thing that costs ten dollars per year per member, but a clearing house through which vital ideas may flow and be transmuted into concrete accomplishments that will not only benefit each individual member, but through him will reach the mass of the people, of whose physical health we are the guardians.

B. P. CROFT.

[NOTE. The JOURNAL is indebted to the writer of the above for his suggestions, criticisms and evidence of interest. Every dignified contribution is welcome—and the JOURNAL desires frank discussion of all problems.—EDITOR.]

A NEW MEDICAL SOCIETY.

Ware, Mass., January 30, 1922.

Mr. Editor:

And so we are going about in these days to form a new society to look out for the material interests of the medical profession. Not a bad idea. Let us all join, and let us have a few slogans:

"We insist upon individual liberty."

"We will fight for our rights."

"Down with the State Department of Health."

"Down with the bloated city specialist of inherited or married wealth, who thinks he knows more about his specialty than we do."

"Down with the Red Cross nurse."

"Down with the industrial nurse."

"Down with the school nurse."

"Down with all legislation which favors any of these latter things."

"No one else shall do aught for the sick and afflicted, and we demand more pay for our services."

Let us keep shouting these into the ears of the people until they sit up and take notice. Then, surely, the individual physician will come into his own, financially, and be most highly respected in the community.

And there is another ancient slogan of the medical profession: "Service to humanity"; a little outworn and old-fashioned, as some believe, but it has never been lost, and I even venture to suggest that it serve as a motto in the meeting-place of the new society. Surely it would need but little refurbishing to shine with its old-time lustre. It is true the medical profession can by no means claim a monopoly of this motto, but if it be adopted by the new society, and its members look well to it that no organization or group of whatever calling or profession has a better right to the title, then whatever else they may be pleased to consider, they surely will not go far wrong in their deliberations. Then, indeed, will the new society be of signal benefit to the medical profession.

And if the time comes when this motto would seem inappropriate, then, by all means let us take it down and substitute one more fitting and up-to-date. How would this strike you? "Every man for himself and the public be damned!"

Very respectfully,

MAURICE W. PEARSON, M.D.

THE ST. LOUIS MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

Mr. Editor:

For the convenience of many of your readers who will plan to attend the meeting of the American Medical Association, which is to be held in our city next May, will you kindly publish the following in your esteemed JOURNAL.

The May meeting of the American Medical Association at St. Louis, promises well toward being the largest in attendance of any of the Association's sessions. Since the publication of the hotels in the journal of the Association in December, inquiries and reservations are being made daily. The hotels and the Conventions Bureau are aiding the Committee in a most satisfactory and helpful way to see that the Fellows are comfortably housed and accommodated. The American Medical Association meetings tax all cities entertaining them to the limit of hotel capacity. Whenever possible, a good Fellow should double up so that no one is left without comfortable lodging.

Reservations should be made by communicating direct with the hotels. If satisfactory arrangements cannot be made in this way, write to Doctor Louis H. Behrens, Chairman Committee on Hotels, 3525 Pine Street, St. Louis, Mo.

Very truly yours,
THOMAS A. HOPKINS, M.D.,
Chairman Committee on Printing.

ST LOUIS' LEADING HOTELS (ALL EUROPEAN PLAN), THEIR LOCATION AND RATES

Hotel, with Number of Rooms	Street Address	Without Bath		With Bath	
		Single	Double	Single	Double
American, 275	7th and Market Sts.	.....	.....	$2.50–3.00	$4.00– 6.00
Diseases of Children					
American Annex, 225	6th and Market Sts.	.....	.....	2.00–3.00	3.00– 6.00
Pathology and Physiology Pharmacology and Therapeutics					
Beers, 114	Grand and Olive Sts.	$1.50	$2.50	2.00–2.50	3.00– 3.50
Brevort, 50	4th and Pine Sts.	.....	.....	2.00	3.00
Cabanne, 43	5545 Cabanne St.	.....	.....	12.00–37.50*	
Claridge, 350	18th and Locust Sts.	.....	.....	2.50–4.00	4.00–10.00
Obstetrics, Gynecology and Abdominal Surgery					
Hamilton, 160	Hamilton and Maple Sts.	.....	.....	2.00–2.50	3.50– 4.00
Jefferson, 400	12th and Locust Sts.	2.50–3.00	4.00	3.00–8.00	6.00–10.00
Surgery, General and Abdominal Orthopedic Surgery					
Laclede Hotel, 265	6th and Chestnut Sts.	1.50–2.00	2.50–3.00	2.50–3.00	3.50– 4.00
Majestic, 200	11th and Pine Sts.	.....	.....	2.50–3.00	3.50– 4.00
Dermatology and Syphilology Nervous and Mental Diseases					
Marion Roe, 200	Broadway and Pine Sts.	.....	.....	1.50–2.00	3.00– 4.00
Marquette, 400	18th and Washington Sts.	2.00–2.50	3.00–3.50	3.00–3.50	4.00– 6.00
Laryngology, Otology and Rhinology					
Maryland, 240	9th and Pine Sts.	2.00	3.00	2.00–3.50	3.00– 5.00
Gastro-Enterology and Proctology Urology					
Planters, 400	4th and Pine Sts.	2.00–2.50	3.00–3.50	2.50–5.00	4.00– 8.00
Ophthalmology					
Plaza, 200	3300 Olive St.	.....	.....	2.00–2.50	3.50– 5.00
Roselle, 100	4137 Lindell Blvd.	.....	.....	1.50–2.50	2.50– 3.50
St. Francis, 120	6th and Chestnut Sts.	1.50–2.00	2.50–3.00	3.00–4.00	4.00– 5.00
Statler, 650	9th and Washington Sts.	.....	.....	3.00–7.00	5.50– 9.50
Practice of Medicine					
Stratford, 100	8th and Pine Sts.	1.50	2.50	2.50	3.50
Terminal, 100	Union Station	1.50–2.00	3.00	3.00–3.50	5.00
Warwick, 200	15th and Locust Sts.	.....	.....	2.00–4.00	4.00– 6.00
Stomatology Preventive Medicine and Public Health					
Westgate, 125	Kingshighway and Delmar Sts.	2.00	2.50	3.00	3.50

* Weekly rates only.

BOOKS RECEIVED FOR REVIEW.

THE JOURNAL acknowledges the receipt of the following books for review:

The Psychiatric Milestone. Society of the New York Hospital. 220 pp. Privately printed.

Lessons on Tuberculosis and Consumption. By Charles E. Atkinson. Published by Funk and Wagnalls Co. 470 pp. Price $2.50.

Arterial Sclerosis. By Louis Tangères Bishop. Oxford Medical Publications. 383 pp. Price $4.25.

Early Symptoms and Treatment of Circulatory Disease. By R. M. Wilson. Oxford Medical Publications. 245 pp. Price $4.75.

Medical Electricity for Students. By A. R. I. Browne. Oxford Medical Publications. 231 pp. Price $4.25.

Hygiene of Women and Children. By Janet E. Lane-Clapon. Oxford Medical Publications. 354 pp. Price $5.00.

Bowel Diseases in the Tropics. By Sir Leonard Rogers. Oxford Medical Publications. 475 pp. Price $9.00.

The Eighteenth Amendment and the Part Played by Organized Medicine. By Charles Taber Stout. Published by Mitchell Kennerley, New York. 216 pp. Price $1.50.

Transactions of the 27th Annual Meeting of the American Laryngological, Rhinological and Otological Society, Inc. Privately published.

"The Blood Supply to the Heart," by Louis Gross. Published by Paul B. Hoeber, New York. 171 pp. Price $5.

"Episcopal Hospital Reports," Vol. V. Edited by Astley P. C. Ashhurst. Published by Wm. J. Dorman Press, Phila. 506 pp.

"Gynecology-Obstetrics" (Practical Medicine Series, Vol. V, 1921), by Emilius C. Dudley and Joseph B. De Lee. Published by The Year Book Publishers, Chicago, Ill. 384 pp. Price $1.75.

A COURSE IN MEDICINE AND PATHOLOGY AT MASSACHUSETTS GENERAL HOSPITAL.

A COURSE in "Medicine and Pathology" will be given in the Amphitheatre of the Pathological Laboratory by Dr. William H. Smith, Visiting Physician of the Massachusetts General Hospital, and Dr. Oscar Richardson, Assistant Pathologist of the Massachusetts General Hospital.

The complete clinical records of cases coming to autopsy will be presented by Dr. Smith, who will discuss the differential diagnosis. The pathological findings will then be stated, the organs demonstrated and the pathology of the cases discussed by Dr. Richardson. This will be followed by a general discussion of the cases, viewed in the light of the completed records, and attention will be called to the newer diagnostic methods and to the broad principles of treatment involved. Microscopical preparations and lantern slides will be used when necessary.

There will be nine exercises, on Wednesdays, in the months of March and April, between 3.15 and 5.15 P.M.

The course is open to graduates in medicine and medical students of the third and fourth years, subject to their acceptance by the hospital.

Women admitted.

Given in connection with the Harvard Graduate School of Medicine.

A fee of $5.00 will be charged for the course. Application should be made to

FREDERIC A. WASHBURN, M.D., *Director*,
Massachusetts General Hospital, Boston, Mass.

THE BOSTON TUBERCULOSIS ASSOCIATION is planning an Institute for Nurses on the same plan as the recent one by this Association, for Physicians. It is intended to give to the nurses the latest facts with reference to the care of patients with tuberculosis, and speakers from outside the State will supplement home talent. The Institute will be in the hands of a committee including Miss Zepha M. Gardner, Superintendent of Nurses, Boston Consumptives' Hospital, Out-Patient Department; Professor Anne Strong of Simmons College, and Miss Bernice W. Billings, Executive Secretary of the Association. A location central in Boston will be selected for the Institute, the date will be Tuesday, March 21, subject to possible change, and the sessions will be in order both morning and afternoon 7-3t

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RESEARCH CLUB OF HARVARD MEDICAL SCHOOL.—The meeting to be held in the Amphitheatre of Building C, on Friday, February 17th, at 12.30 o'clock, will be addressed by Professor Joseph Barcroft, F. R. S., Fellow, Kings College, Cambridge, on "The Raison d'Etre of the Red Corpuscle."

Kindly note the change from Building A to Building C Amphitheatre. This change is for the 17th only.

A CLINICAL MEETING will be held in the Auditorium of the Beth Israel Hospital on Thursday evening, February 23, at 8.15 p.m. Program: "Traumatic Surgery and Infections of the Hand." Doctors Torr W. Harmer, Arthur W. Allen, Carl Bearse. Refreshments served. Physicians invited.

DEPARTMENT OF PUBLIC HEALTH.

In reply to your letter of recent date, I am enclosing data available in cases of dog-bite requiring anti-rabic treatment. You will note an increase of 100 per cent. in number of persons bitten last year, with three deaths.

The Division of Animal Industry are taking active steps to have the local authorities quarantine dogs where cases have been found. It may be said that there were three distinct foci for the past year—metropolitan Boston, 26 cases; Lowell and adjacent territory, 44 cases; Fall River, 16 cases. The remaining cases were scattered throughout the eastern part of the State.

The influenza situation, at this date, does not show any evidence of true epidemic type. All cases reported are mild in character, very few deaths, and apparently little pneumonia of the hemolytic streptococci infection.

I have no way of telling whether or not the situation will change in the next few days, but feel now that we are not to experience an epidemic of the virulent type present in 1918.

Very truly yours,
EUGENE R. KELLEY,
Commissioner of Public Health.

CASES OF DOG-BITE REQUIRING ANTI-RABIC TREATMENT REPORTED TO THE MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH.

	1917	1918	1919	1920	1921	1922
January	4	2	2	9	2	17
February	3	—	—	8	6	3*
March	4	—	—	—	6	
April	3	1	6	8	6	
May	7	6	3	12	9	
June	9	2	6	11	11	
July	9	1	6	3	1	
August	3	2	2	6	18	
September	2	2	3	7	15	
October	9	2	2	1	16	
November	4	2	8	1	11	
December	3	—	6	1	19	
Totals	60	20	54	67	120	

* Figures Feb. 1–3.

CASES OF INFLUENZA AND LOBAR PNEUMONIA REPORTED TO THE DEPARTMENT OF PUBLIC HEALTH.

Influenza.		*Lobar Pneumonia.*	
	1921 1922		1921 1922
Total Jan. ..	158 135	Total Jan. ..	587 571
Total Feb. ..	134 1082	Total Feb. ..	466 239
January 3 ..	0 cases	January 3 ..	12 cases
4 ..	3	4 ..	32
5 ..	1	5 ..	16
6 ..	2	6 ..	35
7 ..	1	7 ..	12
9 ..	2	9 ..	17
10 ..	4	10 ..	31
11 ..	4	11 ..	19
12 ..	2	12 ..	27
13 ..	0	13 ..	27
14 ..	0	14 ..	26
16 ..	3	16 ..	22
17 ..	2	17 ..	23
18 ..	2	18 ..	16
19 ..	4	19 ..	23
20 ..	2	20 ..	28
21 ..	5	21 ..	22
23 ..	2	23 ..	24
24 ..	17	24 ..	22
25 ..	6	25 ..	35
26 ..	13	26 ..	24
27 ..	10	27 ..	9
28 ..	18	28 ..	23
30 ..	15	30 ..	19
31 ..	17	31 ..	27
February 1 ..	43 cases	February 1 ..	28 cases
2 ..	47	2 ..	10
3 ..	87	3 ..	30
4 ..	189	4 ..	40
6 ..	169	6 ..	44
7 ..	316	7 ..	44
8 ..	231	8 ..	43